

Keck School of Medicine of USC

Presented by the Keck School of Medicine of USC, Department of Medical Education

21st ANNUAL

Innovations in Medical Education Conference

2024 ONLINE CONFERENCE

FEBRUARY 15 & 16, 2024



Transforming Health Professions Education Through Innovation

Keck School of Medicine of USC

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IME 2024 Online Conference Agenda

Thursday-Friday, February 15-16, 2024

sites.usc.edu/ime-conference-2024

THURSDAY, FEBRUARY 15, 2024

7:30 AM - 8:45 AM		WORKSHOPS / ABSTRACT TITLES & ORAL PRESENTERS / POSTER TOPIC
Conference Workshop	WS01: Building your Teaching Portfolio: The Power of Self-Assessments	<i>Kiran Pandit, MD, MPH; Anabelle Andon, PhD, MA</i>
Conference Workshop	WS02: Using Memes in Medical Education: Can We Make Students' Learning More Creative & Fun?	<i>Fatma Alzahraa Elkhamisy, MD, MHPE; Fajr Arafat, MBChB Program</i>
Oral Presentations on Innovations 1: EDUCATIONAL RESEARCH	IN-1a. Bias and Disparities in AI-Generated Portrayals of Medical Students: A DALL-E Algorithm Analysis	<i>Molinna Bui; Andrew Ross, MD, MPH</i>
	IN-1b. Utilization Patterns and Perceptions of a Spaced Repetition Flashcard Program among Medical Students	<i>Hanna Nour; David Harris, PhD</i>
	IN-1c. Mediating the Impact of Medical Student Introversion on Happiness	<i>Robert Treat, PhD</i>
	IN-1d. Toward Empathic Listening & Solidarity: A Study of Long COVID Narratives in Community Health	<i>Aria Razfar, PhD; Melissa Wilhelmi, JD</i>
Moderated Poster Session 1	Clinical Skills Training and Simulation (14 posters)	
8:45 AM - 9:00 AM - BREAK		
9:00 AM - 10:15 AM		WORKSHOPS / ABSTRACT TITLES & ORAL PRESENTERS / POSTER TOPIC
MedEd Certificate Workshop	WS03. Planning Interviews and Focus Groups for Health Professions Research	<i>Jacob Schreiber, EdD; Ronan Hallowell, EdD</i>
Conference Workshop	WS04. Promoting Resilience and Professionalism in Academic Medicine with Self-Compassion & Mindfulness	<i>Elizabeth Kuilanoff, MD, MPH; Karen Camero, MD; Sabrina Reed, MD</i>
Oral Presentations on Innovations 2: INNOVATIONS IN UME – TEACHING & ASSESSMENT	IN-2a. Building Health Systems Science Skills Through Experiential Rotations and Classroom-Based Selectives	<i>Caryssa Lim, MPH; Solomon Loel, PhD, MPP</i>
	IN-2b. A Supportive Feeding and Respiratory Medical Equipment Curriculum for Medical Students	<i>Chien-Rong Chen, MD</i>
	IN-2c. Am I Prepared? Integration of Disabilities Education in the Medical School Curriculum	<i>Maria Stevens, MD; Bria George, PharmD</i>
	IN-2d. Script Concordance Test: A Clinical Reasoning Evaluation Tool for Pre-clerkship Medical Students	<i>Nicholas Eremita, BS; Armando Ruiz, BA</i>
Moderated Poster Session 2	Educational Research (11 posters)	
10:15 AM - 10:30 AM - BREAK		
10:30 AM - 11:45 AM		WORKSHOPS / POSTER TOPIC
MedEd Certificate Workshop	WS05. Emotional Intelligence for a Diverse Workplace	<i>Julie Nyquist, PhD; Holly Olson, MD, MACM</i>
Conference Workshop	WS06. From Struggle to Success: Remediation Strategies for Learners Struggling with Professionalism	<i>Reem Itani, MD; Grant Christman, MD, MACM; Jamie Stokke, MD</i>
Conference Workshop	WS07. Beyond the Case Study: Promoting Meaningful Learning through Backward Design	<i>Amber Heck, PhD; Amanda Chase, PhD</i>
Moderated Poster Session 3	Poster Potpourri (11 posters)	
11:45 AM - 12:15 PM – LUNCH BREAK		
12:15 PM - 12:30 PM		
WELCOME - Julie G. Nyquist, PhD, Conference Chair; Cha-Chi Fung, PhD, Conference Co-Chair		
12:30 PM - 1:30 PM		
KEYNOTE ADDRESS	HOLLY J. HUMPHREY, MD, MACP – President of the Josiah Macy Jr. Foundation WHY EXEMPLARY CLINICAL LEARNING ENVIRONMENTS MATTER NOW MORE THAN EVER	

1:30 PM - 1:45 PM - BREAK	
1:45 PM – 3:00 PM WORKSHOPS / ABSTRACT TITLES & ORAL PRESENTERS / POSTER TOPIC	
MedEd Certificate Workshop	WS08. Narrative Medicine Methods to Promote Interprofessional Education and Practice <i>Pamela Schaff, MD, PhD; Erika Wright, PhD; Kairos Llobrera, PhD</i>
Conference Workshop	WS09. Integrating Sex and Gender Based Medicine into Health Professional Education: Tenets and Tools <i>Deborah Gomez Kwolek, MD; Jewel Kling, MD, MPH; Kimberly Templeton, MD; Janice Werbinski, MD</i>
Oral Presentations on Innovations 3: POTPOURRI	IN-3a. Medical Student-Led Research Education Program for Underrepresented High School Students <i>Yasoda Satpathy, BS; Minsub Lee, BS</i>
	IN-3b. The Push for POCUS: Are Internal Medicine Residents Interested in Ultrasound Training? <i>Anusha Majagi, MD, MPH</i>
	IN-3c. Exploring Learners' Experiences with Professionalism Feedback Using a Feedback Literacy Framework <i>Vincent Grospe, BSc; Daniela Maristany, MD</i>
	IN-3d. Measuring Results for Practicing Arthroscopic Sports Surgeons when Taught via Augmented Reality <i>Kala Kathirgamanathan, MD, MACM, FRCPC; Ivan Wong, MD, MACM, FRCSC</i>
Moderated Poster Session 4	Wellbeing, Wellness, Professional Identity Formation (14 posters)
3:00 PM – 3:15 PM – BREAK	
3:15 PM – 4:30 PM WORKSHOPS / POSTER TOPICS	
MedEd Certificate Workshop	WS10. Non-Violent Communication in our Workspaces and Our Lives <i>Adriana Hernandez, MD; Karen Camero, MD; Peter Ureste, MD; Julie Nyquist, PhD</i>
Conference Workshop	WS11. Automatic Negative Thoughts: Reframing Cognitive Distortions to Improve Wellbeing <i>Dotun Ogunyemi, MD; Shami Iyabo Mitchell, MS; Denise Willoughby, MS; Jesus Terrazas, MS</i>
Moderated Poster Session 5	Justice, Equity, Diversity, Inclusion (JEDI) (14 posters)
Moderated Poster Session 6	Community-Based & Quality Improvement Projects (13 posters)
4:45 PM – 6:15 PM POSTER TOPICS	
Moderated Poster Session 7	Technology and Gaming (12 posters)
Moderated Poster Session 8	Variety of Curricular and Research Projects (14 posters)
Moderated Poster Session 9	Curricular Innovations – UME (14 posters)

FRIDAY, FEBRUARY 6, 2024

7:30 AM - 8:45 AM WORKSHOPS / ABSTRACT TITLES & ORAL PRESENTERS / POSTER TOPIC	
Conference Workshop	WS12. Positive Intelligence: Intercepting Your Saboteurs and Mastering Your Sage Powers to Improve Wellbeing <i>Nida Awadallah, MD, MACM; Gina Kim, MD, MPH, MACM; Victoria Dunn, MBBS, MRCP, DRCOG, MACM; Maria Munoz, MD, MACM</i>
Conference Workshop	WS13. Enhancing Assessment Practices: Workshop on Validity, Reliability, and Item Analysis <i>Rohini Karunakaran, PhD, PG Diploma in Medical Education; Sri Kumar PS, MBBS DPM, PG Diploma in Medical Education</i>
Oral Presentations on Innovations 4: INNOVATIVE METHODS – UME & GME	IN-4a. Mentoring Circles and Identity Formation for Latinx Pre-Meds and Med Students <i>Peter Ureste, MD</i>
	IN-4b. Approaching Professional Identity Formation Curriculum with a Trauma-Informed Educational Framework <i>Ye Lim (Sarah) Lee, BS</i>
	IN-4c. Art in Medicine: A Creative Way to Improve Trainee Wellness and Cultivate Empathy <i>Cassandra Wang, MD; Jamie Stokke, MD</i>
	IN-4d. The BRS Crash Course: A Mixed-Methods Analysis of Novel Near-Peer Teaching in a Spiral Curriculum <i>Viraj Shah, BSc; Ria Varma, BSc</i>
Moderated Poster Session 10	JEDI & Potpourri (15 posters)
8:45 AM - 9:00 AM – BREAK	

9:00 AM - 10:15 AM		WORKSHOPS / ABSTRACT TITLES & ORAL PRESENTERS / POSTER TOPIC
MedEd Certificate Workshop	WS14. Simulation-Based Education: An Introduction to Design, Development, and Deployment <i>Regaldo A. Valerio, DNP, CRNA, CHSE; Kathryn Schaivone, EdD</i>	
Conference Workshop	WS15. Be the Change You Wish to See: Fostering a Healthy Program Culture Through Emotional Intelligence <i>Sabrina Reed, MD; Sara Wattenbarger, DO; Adriana Hernandez, MD</i>	
Oral Presentations on Innovations 5: TECHNOLOGY IN HEALTH PROFESSIONS EDUCATION	IN-5a. Orienting Residents to Inpatient Pediatric Workflow Using an Escape Room <i>Morgan Smith, MD</i>	
	IN-5b. Long-Term Impact of Cardiac Auscultation Training Using Educational Technology for Medical Learners <i>Sarah Garvick, MS, MPAS, PA-C; Samuel Pendergraft, PhD, PA-C</i>	
	IN-5c. An Interdisciplinary Escape Room to Improve Trainees Knowledge and Skills in Event Reporting <i>Thomas Beardsley, MD; Colleen Kalynych, EdD</i>	
	IN-5d. Creation and Implementation of Racially Inclusive Surgical Simulation Models in Medical Education <i>Christina Shaw, MD; Morgan Yacoe, MFA</i>	
Moderated Poster Session 11	Use of Technology in Health Professions Education (14 posters)	
10:15 AM - 10:30 AM - BREAK		
10:30 AM - 11:45 AM		WORKSHOPS / POSTER TOPIC
MedEd Certificate Workshop	WS16. Promoting Inclusiveness in the Clinical Learning Environment: Actionable Steps for Every Educator <i>Ignacio Calles, MD; David Diller, MD</i>	
Conference Workshop	WS17. Enhancing Interprofessional Communication Skills <i>Daryoush Javidi, MD; Ma. Shiril Armero, MD; Julie G. Nyquist, PhD</i>	
Conference Workshop	WS18. Raising the Bar: Scaffolding Undergraduate Students to Conduct Qualitative Research <i>Sheela Rao, MD, MACM, MPH; Emily Rhinehart, BS</i>	
Moderated Poster Session 12	Promotion of Knowledge (13 posters)	
11:45 AM - 1:00 PM		
Lunch and Hosted Zoom Networking		
1:00 PM - 2:15 PM		WORKSHOPS / POSTER TOPICS
Conference Workshop	WS19. Professionalism: What Happens After the Lapse? <i>Maria Munoz, MD, MACM; Kala Kathirgamanathan, MD, MACM; Lisa Gray, MD, MACM</i>	
Conference Workshop	WS20. Patient Care Simulations to Teach Health Professional Students to Communicate with Empathy <i>Laressa Bethishou, PharmD, APH, BCPS; Luma Munjy, PharmD; Kathleen Besinque, PharmD, MSED</i>	
Moderated Poster Session 13	Curricular Innovations – GME (13 posters)	
Moderated Poster Session 14	Arts & Humanities; Faculty/Staff Development (12 posters)	
2:15 PM - 2:30 PM - BREAK		
2:30 PM - 4:00 PM		WORKSHOP / ABSTRACT TITLES & ORAL PRESENTERS / POSTER TOPIC
Conference Workshop	WS21. Accessible Experiential Learning in a Safe Virtual Environment <i>Karim Qayumi, MD, PhD; Shahriar Hosseinzadeh, MD</i>	
Oral Presentations of the Best of Cool Ideas 1: UNDERGRADUATE MEDICAL EDUCATION	CI-1a. The Use of Music in Medical Education to Promote Deep Listening and Awareness of Self and Others <i>Kathryn Schwartzmann, BMus; Deepthiman Gowda, MD, MPH, MS</i>	
	CI-1b. Using Interprofessional Education to Meet the Mental Health Needs of Farmworkers <i>Kimberly Roth, PhD; Janine Chalk-Wilayto, PhD</i>	
	CI-1c. The Digital Shift: Assessing ChatGPT's Capability as a New Age Standardized Patient <i>Joseph Cross, PhD; Tarron Kayalackakom, MD, MHPE</i>	
	CI-1d. Bridging the Gap: Establishing a Disability-Competent Care Curriculum for Medical Students <i>Simrina Desai, BS; Samantha Zimmer, BS, MS</i>	
	CI-1e. Using a New Visual Model to Teach Positive Professionalism Through Emotional Intelligence Skills <i>Ellen Friedman, MD</i>	

2:30 PM – 4:00 PM continued WORKSHOP / ABSTRACT TITLES & PRESENTERS / POSTER TOPIC

Oral Presentations of
the Best of Cool
Ideas 2:

GRADUATE AND
CONTINUING
MEDICAL
EDUCATION

CI-2a. Elder Capacity Assessment and Mistreatment Fellowship*Julia Hiner, MD***CI-2b. Leveraging Interactive Technology to Enhance Skills in Pediatric Pathology for General Pathologists***Nick Shillingford, MD; Moe Takeda, DO***CI-2c. Addressing the Need for Post Code Debriefing and Emotional Well-being with Psychological First Aid***Geny B. Zapata, PsyD***CI-2d. Growing from Within: Mastering Self-Assessment and Feedback for Pediatric Residents***Alexandra Jostes, MD***CI-2e. Preparing IM Residents to Care for Indigenous Peoples: A Co-produced DEI Curriculum***Seema Jain, MD, MPH; Dana Sall, MD, MEd*

Moderated Poster
Session 15

Admissions, Administration, Student Support (13 posters)

4:00 PM – 4:15 PM - BREAK

4:15 PM – 5:00 PM

FINAL GATHERING - CONFERENCE AWARDS*Julie G. Nyquist, PhD, Conference Chair; Cha-Chi Fung, PhD, Conference Co-Chair*

Attendance at five MedEd Certificate Workshops (addressing key skills or timely topics) over three years can lead to a MedEd Certificate of Achievement from the Department of Medical Education, Keck School of Medicine of USC. You must be enrolled in the [Medical Education Conference Certificate Program](#).

Accreditation Statement: The Keck School of Medicine of USC is accredited by the Accreditation Council for Continuing Medical Education (ACCME) to provide continuing medical education for physicians.

2-Day Innovations in Medical Education Conference Credit Designation: The Keck School of Medicine of the University of Southern California designates this live activity for a maximum of 14 *AMA PRA Category 1 Credits*[™]. Physicians should claim only the credits commensurate with the extent of their participation in the activity.

Disclosure Statement:

The CME content included in this activity is non-clinical and not related to any ACCME defined ineligible company. Therefore, all course directors, faculty speakers, CME planners and moderators have no financial relationships with any ineligible companies to disclose.

IME 2024 Keynote Address

“Why Exemplary Clinical Learning Environments Matter Now More than Ever”

Thursday, February 15, 2024 • 12:30 – 1:30 pm

Holly J. Humphrey, MD, MACP

President of the Josiah Macy Jr. Foundation

Dr. Holly J. Humphrey, President of the Josiah Macy Jr. Foundation, the only national foundation dedicated to the solely to improving the education of health professionals, will explore historical and contemporary forces which shape our clinical learning environments. She will address the opportunities that exist to ensure that our learners benefit from innovations in health professions education scholarship, the transformational potential of interprofessional team collaboration, and why it is necessary to elevate medical education scholarship as central to the future of the profession.



Holly J. Humphrey, MD, MACP, became the eighth president of the Josiah Macy Jr. Foundation in July 2018. Previously, she served for 15 years as the Ralph W. Gerard Professor in Medicine and Dean for Medical Education at The University of Chicago. Dr. Humphrey earned her MD degree with honors from The University of Chicago and as a member of Alpha Omega Alpha honor society. Following an internal medicine residency, pulmonary and critical care fellowship, and Chief Residency, all in the department of medicine at The University of Chicago, she served for 14 years as Director of the Internal Medicine Residency Program, which provided the foundation for her medical education career. Her signature programs in medical education have focused on diversity and inclusion, mentoring, and professional identity formation. She is an elected member of the National Academy of Medicine, a Master of the American College of Physicians, and a Fellow of the Royal College of Physicians (London). Crain’s Chicago Business featured her as one of their “Women to

Watch,” and Modern Healthcare celebrated her as their Excellence in Governance honoree for work as an outstanding healthcare board member. The NorthShore University HealthSystem created the Holly J. Humphrey Medical Education Fund with a one-million-dollar gift to The University of Chicago. Her teaching honors include selection as a favorite faculty teacher by graduating University of Chicago Pritzker School of Medicine students more than 25 times.



Medical Education Conference Certificate Program (MedEd Certificate Program within the IME Conference)

Conference participants are being given the opportunity to earn a Certificate of Achievement through participation in a set of specially-designed workshops. The Department of Medical Education at the Keck School of Medicine of USC offers six interactive workshops each year at IME. The workshop activities are designed to maximize the transfer of knowledge and skills from the workshop setting directly to each participant's work setting. All registered conference participants can attend any of these workshops. The workshops are aimed at providing participants with the principles and essential skills needed by educators within key roles in undergraduate and graduate medical education settings: teacher, leader, scholar, and mentor.

There is a three-step process to earn your IME Conference Certificate of Achievement after you register for the conference.

Step 1: **Enroll** online at the link below so that we can track your participation.

Step 2: **Attend five MedEd Certificate Workshops** over three years during the IME Conference.

To receive credit for each workshop you must submit the evaluation and feedback form online through the link provided during the session. Please make sure to enter your name and reflection on a concept covered during the workshop. Since much of the content is delivered during small group breakouts, you must attend the live workshop.

Step 3: **Complete an online story form** about how you have changed your practice as a teacher, leader, mentor, or scholar based on your participation in two of the five workshops attended. Your story form will be sent to you approximately three months after you complete your fifth workshop.

Remember, to be eligible to earn a certificate you **MUST** enroll.

Go to this link: <http://tinyurl.com/ime-meded-certificate>

Welcome to the 2024 Innovations in Medical Education Conference

CONFERENCE LIVE ONLINE DATES & TIMES:

Thursday, February 15, 2024: 7:30 AM PST – 6:15 PM PST

Friday, February 16, 2024: 7:30 AM PST – 5:00 PM PST

The event website will be open to everyone registered until at least May 2024

https://whova.com/portal/webapp/innov_202402/

Visit sites.usc.edu/ime-conference-2024 for more information.

How to Have the Best Experience at the 2023 IME Online Conference:

- Make sure your Zoom app is up-to-date.
- Use Chrome for the best experience with Whova on a computer.
- Download the Whova mobile app for the best experience on a mobile device.
- Explore the Conference Agenda in the left-hand sidebar menu (at the bottom of the screen on the mobile app) and plan your schedule.
- Add any sessions you want to attend to your personal agenda to help you quickly find the link to the session. There are no limits on the number of attendees at any workshop. You can change or remove any session on your own agenda. Through your agenda, you can add session reminders to your personal calendar.
- Review the oral presentations and posters grouped by session topics. Plan to attend the live sessions to connect with the authors.
- Explore the opportunities to connect with other attendees provided by Whova.
- When it's time for any session you want to join, click on the green camera icon in the agenda to access the Zoom Meeting link.
- **Have fun! Ask questions of the presenters! Discuss the innovations and cool ideas!**
- Provide feedback to the presenters for every session you attend by: 1) clicking on the link provided in the Zoom session chat; 2) clicking the Rate Session button in the Whova agenda; or 3) going to the Feedback link in the Resources dropdown in the left-hand sidebar menu. *You must do this for every session you want to apply to a MedEd Certificate (make sure you sign up before the conference).*
- Go back to the 2024 IME Online Conference Whova website to explore everything you missed (all those posters...oral presentations... workshops...) and continue Q&A conversations.
- Check out these Conference Proceedings with all abstracts and presenter bios.

Conference Outcome Objectives:

By the end of the conference, participants will be better able to —

- Utilize evidence-based principles of teaching, leading, mentoring, and educational scholarship in their work within health professions' education.
- Incorporate techniques for enhancing the learning environment and wellbeing for all participants within their educational setting.
- Teach and assess their learners in relation to the six ACGME Core Competencies by adapting the cool ideas and innovations learned about at IME.
- Incorporate cool ideas and innovations into the development of curricula and teaching at all levels of health professions' education.

Session Feedback and Evaluations:

During the Zoom sessions, the link to the session evaluation and feedback form will be provided in the chat so it can be completed immediately following the session. For your convenience, there are two other options: 1) click the Rate Session button found on Whova session page; or 2) find the session in the list at the Feedback link in the Resources dropdown in the left-hand sidebar menu. Please complete your evaluations immediately after the sessions. Your feedback is valuable to the presenters and will help us plan future meetings.

For those attendees who have paid the additional fee for CME Credits (up to 14 credits) for this conference, you must enter the Zoom sessions through the link in Whova so we can determine your attendance. An email will be sent after the conference with instructions to print your CME certificate.



Workshop Abstracts

TIME	SESSION	WORKSHOP CODE	WORKSHOP TITLE	PRESENTER LIST	PAGE #
Thurs 2/15 7:30 - 8:45 am	Conference Workshop	WS01	Building your Teaching Portfolio: The Power of Self-Assessments	Kiran Pandit, MD, MPH; Anabelle Andon, PhD, MA	29
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Thurs 2/15 9-10:15 am	MedEd Certificate Workshop	WS03	Planning Interviews and Focus Groups for Health Professions Research	Jacob Schreiber, EdD; Ronan Hallowell, EdD, MA; Cha Chi Fung, PhD	32
Thurs 2/15 9-10:15 am	Conference Workshop	WS04	Promoting Resilience and Professionalism in Academic Medicine with Self-Compassion and Mindfulness	Elizabeth Kuilanoff, MD, MPH; Karen Camero, MD; Brandon Palmer, MD; Sabrina Reed, MD	33
Thurs 2/15 10:30- 11:45 am	MedEd Certificate Workshop	WS05	Emotional Intelligence for a Diverse Workplace	Julie Nyquist, PhD; Holly Olson, MD, MACM	35
Thurs 2/15 10:30- 11:45 am	Conference Workshop	WS06	From Struggle to Success: Remediation Strategies for Learners Struggling with Professionalism	Jamie Stokke, MD; Reem Itani, MD; Grant Christman, MD, MAcM	36
Thurs 2/15 10:30- 11:45 am	Conference Workshop	WS07	Beyond the Case Study: Promoting Meaningful Learning through Backward Design	Amber Heck, PhD; Amanda Chase, PhD;	37
Thurs 2/15 1:45-3 pm	MedEd Certificate Workshop	WS08	Narrative Medicine Methods to Promote Interprofessional Education and Practice	Pamela Schaff, MD, PhD; Erika Wright, PhD; Kairos Llobrera, PhD	39
Thurs 2/15 1:45-3 pm	Conference Workshop	WS09	Integrating Sex and Gender Based Medicine into Health Professional Education: Tenets and Tools	Deborah Gomez Kwolek, MD; Juliana Kling, MD, MPH; Kimberly Templeton, MD; Janice Werbinski, MD	41
Thurs 2/15 3:15-4:30 pm	MedEd Certificate Workshop	WS10	Non-Violent Communication in our Workspaces and Our Lives	Adriana Hernandez, MD; Karen Camero, MD; Peter Ureste, MD; Julie Nyquist, PhD	43
Thurs 2/15 3:15-4:30 pm	Conference Workshop	WS11	Automatic Negative Thoughts: reframing cognitive distortions to improve wellbeing	Dotun Ogunyemi, MD; Shami-Iyabo Mitchell, MS; Denise Willoughby, MS; Jesus Terrazas, MS	44
Fri 2/16 7:30-8:45 am	Conference Workshop	WS12	Positive Intelligence: Intercepting Your Saboteurs and Mastering Your Sage Powers to Improve Well-be	Nida Awadallah, MD, FFAFP, MACM; Gina Kim, MD, MPH, MACM, FAAP; Victoria Dunn, MBBS, MRCGP, DRCOG; Maria Munoz, MD, FFAFP	46
Fri 2/16 7:30-8:45 am	Conference Workshop	WS13	Enhancing Assessment Practices: Workshop on Validity, Reliability, and Item Analysis	Rohini Karunakaran, PhD, PG Diploma in Medical Education; Srikumar P S, MBBS DPM, PG Diploma in Medical Education	48
Fri 2/16 9-10:15 am	MedEd Certificate Workshop	WS14	Simulation-Based Education: An Introduction to Design, Development and Deployment	Regaldo A. Valerio, DNP, CRNA, CHSE; Kathryn Schaivone, EdD	50
Fri 2/16 9-10:15 am	Conference Workshop	WS15	Be the Change You Wish to See: Fostering a Healthy Program Culture Through Emotional Intelligence.	Sabrina Reed, MD; Sara Wattenbarger, DO, FACEP; Adriana Hernandez, MD	51
Fri 2/16 10:30- 11:45 am	MedEd Certificate Workshop	WS16	Promoting Inclusiveness in the Clinical Learning Environment: Actionable Steps for Every Educator	Ignacio Calles, MD; David Diller, MD	53
Fri 2/16 10:30- 11:45 am	Conference Workshop	WS17	Enhancing Interprofessional Communication Skills	Daryoush Javidi, MD; Ma. Shiril Armero, MD; Julie Nyquist, PhD	56

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Fri 2/16 10:30- 11:45 am	Conference Workshop	WS18	Raising the Bar: Scaffolding Undergraduate Students to Conduct Qualitative Research	Sheela Rao, MD, MACM, MPH; Emily Rhinehart, BS	58
Fri 2/16 1-2:15 pm	Conference Workshop	WS19	Professionalism: What Happens After the Lapse?	Maria Munoz, MD, MCAM; Kala Wong, MD, FCCP, MCAM; Lisa Gray, DO, MACM, FACC	59
Fri 2/16 1-2:15 pm	Conference Workshop	WS20	Patient Care Simulations to Teach Health Professional Students to Communicate With Empathy	Laressa Bethishou, PharmD, APH, BCPS; Kathleen Besinque, PharmD, MEd, FASHP, FCSHP, FCPHA, NCMP; Luma Munjy, PharmD	61
Fri 2/16 2:30-4 pm	Conference Workshop	WS21	Accessible Experiential Learning in a Safe Virtual Environment	Karim Qayumi, MD, PhD, FRCSC; Shahriar Hosseinzadeh, MD	63

Oral Presentation Abstracts

TIME	SESSION	TOPIC	ABSTRACT TITLE	AUTHOR LIST	PAGE #
Thurs 2/15 7:30 - 8:45 am	Oral Presentation of Innovations 1	Educational Research	Bias and Disparities in AI-Generated Portrayals of Medical Students: A DALL-E Algorithm Analysis	Bui, Molinna; Onuh, Ifeanyichukwu; Yi, Paul; Kuckelman, Ian; Ross, Andrew	65
Thurs 2/15 7:30-8:45 am	Oral Presentation of Innovations 1	Educational Research	Utilization Patterns and Perceptions of a Spaced Repetition Flashcard Program among Medical Students	Nour, Hanna; Harris, David	67
Thurs 2/15 7:30-8:45 am	Oral Presentation of Innovations 1	Educational Research	Mediating the Impact of Medical Student Introversion on Happiness	Treat, Robert; Fritz, Jeff; Prunuske, Amy; Kaljo, Kristina; Hanke, Craig	69
Thurs 2/15 7:30-8:45 am	Oral Presentation of Innovations 1	Educational Research	Toward Empathic Listening & Solidarity: A Study of Long COVID Narratives in Community Health	Razfar, Aria; Brier, Jennifer; Lin, Janet; Musick, Hugh; Wilhelmi, Melissa; Chisti, Ammar	71
Thurs 2/15 9-10:15 am	Oral Presentation of Innovations 2	Innovations in UME - Teaching and Assessment	Building Health Systems Science Skills Through Experiential Rotations and Classroom-Based Selectives	Lim, Caryssa; Solomon, Loel	73
Thurs 2/15 9-10:15 am	Oral Presentation of Innovations 2	Innovations in UME - Teaching and Assessment	A Supportive Feeding and Respiratory Medical Equipment Curriculum for Medical Students	Chen, Chien-Rong; Chang, Todd; Christman, Grant; Cowell, Melissa; Trost, Margaret	75
Thurs 2/15 9-10:15 am	Oral Presentation of Innovations 2	Innovations in UME - Teaching and Assessment	Am I Prepared? Integration of Disabilities Education in the Medical School Curriculum	Stevens, Maria; George, Bria; Solman, Susan; Eliason, Sarah	77
Thurs 2/15 9-10:15 am	Oral Presentation of Innovations 2	Innovations in UME - Teaching and Assessment	Script Concordance Test: A Clinical Reasoning Evaluation Tool for Pre-clerkship Medical Students	Eremita, Nicholas; Nguyen, Quang; Ruiz, Armando; Fragoso, Briana; Quach, Diana; Baranski, Taylor; Green, Gordon	79
Thurs 2/15 1:45-3 pm	Oral Presentation of Innovations 3	Potpourri	Medical Student-Led Research Education Program for Underrepresented High School Students	Satpathy, Yasoda; Lee, Minsub; Wong, Angela; Lushniak, Stephanie; Nguyen, Hieu; Maldonado, Daniel; Ben-Romdhane, Nadine; Larkin, Brigid; Domingo, Karyssa; Garcia, Jesse; Murphy, James	81
Thurs 2/15 1:45-3 pm	Oral Presentation of Innovations 3	Potpourri	The Push for POCUS: Are Internal Medicine Residents Interested in Ultrasound Training?	Majagi, Anusha; Ramaseshan, Karthik, Ahmad, Sanaa; Polina, Aws; Kagzi, Asim	83
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Fri 2/16 1-2:15 pm	Moderated Poster Session 14: Arts & Humanities or Faculty/Staff Development	Poster #184	"See the World Through My Eyes": Teaching Perspective Taking in Medical Physiology Course	Ivasenko, Anzhelika	446
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Fri 2/16 1-2:15 pm	Moderated Poster Session 14: Arts & Humanities or Faculty/Staff Development	Poster #186	Galveston Art & Music Therapy Program for Individuals with Disabilities: A Pilot Curriculum	Quach, Valerie; Wadhawan, Nivan; Hamilton, Luke; Szauder, Karen; Farr, Norman	450
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Fri 2/16 2:30-4 pm	Moderated Poster Session 15: Admissions, Administration, Student Support	Poster #191	Tackling Step 1 Pass/Fail Challenges: A Student-Led Initiative	Davis, Konnor; Yang, Chenyi; Frank, Aaron; Peterson, Devan; Mohammed, Zariyah; Huck, Nolan A; Breziner, Dalia; Guirguis, Nancy; Stokes, Lauren	460
Fri 2/16 2:30-4 pm	Moderated Poster Session 15: Admissions, Administration, Student Support	Poster #192	Reclaiming Our Roots: Principles for Recruiting/Retaining URIM Residents & Faculty-Family Medicine	Guerrero, Jessie; Ku-Borden, Teresa	462

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Building your Teaching Portfolio: The Power of Self-Assessments

Pandit, Kiran (1); Ptak, Corey (2); Andon, Anabelle (3); Davenport, Glen (2); Worley, Emmagene (4); Murano, Tiffany (4)

(1) *Albert Einstein College of Medicine Department of Emergency Medicine*; (2) *Columbia University Center for Teaching and Learning*; (3) *Center for Education Research and Evaluation at Columbia University Irving Medical Center*; (4) *Columbia University Department of Emergency Medicine*

Workshop Description: We ask our learners to reflect on their own learning and growth as physicians, so why don't we ask our faculty to reflect on their own learning and growth as educators? Self-assessment of teaching is crucial both for professional growth and for documentation of educational efforts – important for academic advancement as a clinician-educator. Join us in this session as we explore some new tools that you can use today to support your faculty in their journey towards becoming expert educators.

Rationale: Evaluation of teaching is critical for both growth in teaching ability and for academic advancement. Traditional over-reliance on “student evaluations of teaching” neglects the importance of self-assessments and peer-assessments in a multifaceted approach to evaluation of teaching. We, as medical educators, can learn to complement learner-based teaching assessments with well-designed self-assessments that can stimulate improvements in our teaching as well as build our teaching portfolios. The clinician-educator milestones recently advanced by AAMC highlight the importance of reflective practice and commitment to personal growth (Universal Pillar 1), effective teaching practices (Educational Theory and Practice 1), and the science of teaching and learning (Educational Theory and Practice 8). Self-assessments can serve to move us forward in these milestone rubrics, as they are based on reflective practice, focused on setting learning goals for our own teaching using best evidence of effective teaching practices.

Outcome Objectives: By the end of this session, participants will be able to:

1. Describe limitations of traditional SETs (student evaluation of teaching).
2. Explain the role of self-assessments as part of a more holistic and objective model of evaluation of teaching that correlates to the AAMC clinician-educator milestones.
3. Complete and critique the new micro-level and meso-level self-assessment instruments to provide feedback for improvement of the instruments.
4. Formulate a plan for implementation of these self-assessment instruments at their own institution.
- 5.

Intended Participants: Faculty developers at schools of the healthcare professions.

Methods: This interactive session will engage the audience through the use of large group discussion (including Zoom chat function and Zoom polls), time allotted for independent exploration and completion of the self-assessment tools, break-out groups for small group discussion (3-5 participants per group), large-group share-out, and independent completion of action plans for implementation of the self-assessment instruments at their own institutions.

Activity Timeline:

1. 5 minutes: Large-group format, with introductions, learning objectives, and an overview of the workshop structure.
2. 10 minutes: Interactive large-group format in which we elicit the participants' learning goals and reflections on benefits and flaws of current systems of evaluation of teaching, along with a discussion of why this matters.
3. 10 minutes: Large group didactic: review the AAMC-ACGME clinician-educator milestones, the TEval holistic approach to evaluation of teaching, and why self-study are a part of this model.
4. 15 minutes: Participants will independently explore and complete the self-assessment tools, reflecting on their own teaching.

5. 5 minutes: Large-group didactic on program design considerations in implementing the self-assessment tools at schools of healthcare professions.
6. 10 minutes: Participants will engage with peers in break-out small groups of 3-5 participants per group, to reflect on the self-assessment tools and program design considerations, and discuss enablers and barriers to implementing the tools at their own institutions.
7. 10 minutes: Large group share-out.
8. 10 minutes: Wrap up by asking participants to declare their take-away points and next steps with the large group.

Take-Home Tools:

Self-assessment Form for On-shift Teaching

Self-assessment Form for Teaching via Lecture

Self-assessment Form for Leading an Interactive Workshop

Self-assessment Form for Curriculum Development

Using Memes in Medical Education: Can We Make Students' Learning More Creative & Fun?

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(1) Helwan University, Faculty of Medicine, Pathology Department, Egypt; (2) King Salman International University, Faculty of Medicine, Egypt

Workshop Description: Memes are pictures/videos that are fun in nature and have written scripts/audio. They are widespread online. Memes' incorporation in medical education carries many advantages and is built on many pedagogical theoretical backgrounds. Nevertheless, memes use by medical educators is scarce. This workshop is planned to promote the use of memes by medical educators to turn learning into fun, engage students, boost their proactive roles in their learning, foster reflection and promote creativity.

Rationale: Producing memes is a form of creativity, yet the involvement of memes in medical education is limited. Meme creation by students for their learning is built upon many pedagogical theoretical backgrounds, including constructive learning theories, Kolb's experiential model, and Mayer's cognitive model of multimedia learning. The reflection on memes by students adopts experiential learning. Research on meme perception by students showed many positive results, including higher student engagement, turning learning into fun, and deeper understanding. The use of memes in medical education is still not tried in many medical sciences in the published literature, presenting an interesting area for research.

Outcome Objectives: By the end of the workshop, attendees will be able to:

1. Explain the concept of meme, the advantages, and the challenges facing its adoption in medical education learning contexts.
2. Recognize approaches adopted for meme application in medical education.
3. Design a meme-based learning plan applicable to medical instruction.

Intended Participants: Medical educators who are dedicated to innovating the learning environment by incorporating interactive and engaging instruction.

Methods: Small and large group interaction, brainstorming, and reflections

Activity Timeline:

1. Introduction to memes (5 minutes)
2. Why incorporate memes in our instruction (10 minutes) [Large group discussion]
3. Meme approaches used in medical education (10 minutes)
4. Application & Discussion: Brainstorming to design meme-based learning applicable to learning contexts (30 minutes) [Small group activity]
5. Anticipated challenges and essential tips for using meme-based learning approaches in the classroom (15 minutes) [Interactive activity on Padlet online platform]
6. Conclusion (5 minutes)

Take-Home Tools:

An understanding of the different approaches to use memes-based learning and its importance.
Practical strategy for implementing meme-based learning instruction.

Designing Quality Qualitative Projects: Planning Interviews & Focus Groups for Med Ed Research

Schreiber, Jacob; Hallowell, Ronan; Fung, Cha Chi
Keck School of Medicine of USC

Workshop Description: Qualitative methods such as in-depth interviews and focus groups often yield specific, timely, and actionable insights for program improvement. This workshop will explore the menu of interview and focus group options that are available to educators and guide selecting the best method to collect the type of information you need to best study your programs. Participants will engage in activities to select a method and plan their data collection.

Rationale: Many medical educators underestimate the amount of planning necessary to collect the type of information from interviews and focus groups that will satisfy questions about their programs. This workshop demystifies various types of interviews and group discussions, and guides participants through steps to plan what they will need to carry out data collection.

Outcome Objectives:

1. Identify major types of interviews and group discussion methods of collecting qualitative data.
2. Interpret the strengths and weaknesses of each type of interview and group discussion.
3. Differentiate which type of interview or group discussion is best to answer questions about your educational programs.
4. Generate a detailed plan to carry out your data collection.

Intended Participants: This workshop will be of particular interest for returning participants of the “From Cool Idea to Scholarly Project” workshop from IME 2023. However, any educators with an interest in institutional research and evaluation may benefit from the tools shared.

Methods: Participants will receive instruction about the types of interviews and focus groups that are most beneficial to educational research in a large group setting. Then, participants will work together in small groups to identify the best method for their questions or a standardized case study if they do not have their own questions in mind. Participants will return to the large group to receive further instruction about next steps in planning various types of data collection activities. In a second small group activity, learners will complete a worksheet to strategize their data collection.

Activity Timeline:

1. Didactic Lesson Introducing Types of Data Collection: 20 min
2. Small group breakout Selecting a Method: 15 min
3. Large group discussion – Planning Data Collection: 15 min
4. Small group breakout Complete Planning Worksheet: 20 min
5. Wrap up and questions: 5 min

Take-Home Tools:

Participants will complete a methodology selection tool that guides them through various decisions in the planning process. The tool may be used as a template for future planning.

**Promoting Resilience and Professionalism in Academic Medicine
with Self-Compassion and Mindfulness**

Kuilanoff, Elizabeth (1); Camero, Karen (1); Reed, Sabrina (2)
(1) Children's Hospital Los Angeles; (2) Keck School of Medicine of USC

Workshop Description: Burnout is pervasive in medicine. Self-compassion and mindfulness are two proven strategies to promote resilience. In this engaging 75 minute workshop, we will provide medical educators with self-compassion and mindfulness strategies through a series of interactive activities such as clinical case scenarios, self-assessments and small group discussions. At the end of this session, participants will implement these tools for themselves and their learners to improve wellbeing and reduce burnout.

Rationale: Burnout is pervasive in medicine. Over 60% of physicians report at least one symptom of burnout, an increase of over 20% in the past 5 years, especially since the onset of the COVID-19 pandemic (1). Similarly, about 50% of resident physicians report feeling burnout (2). Burnout is not only linked to worse patient outcomes, it is linked with substance abuse and suicidal ideation. We need tools to increase resilience that combat burnout, for ourselves and our learners. The influential psychologist, Kristin Neff, introduced mindfulness and self-compassion to help increase resiliency (3,4). These two concepts support our commitment to ACGME's professionalism subcompetencies to maintain our "emotional, physical, and mental health" and "pursue continual personal and professional growth". In this workshop, we will learn how to help resident learners apply these concepts through a case-based, interactive session. After, participants will be able to teach these concepts to help promote resiliency at their institution.

Outcome Objectives:

1. Apply self-compassion practices and strategies in real life situations.
2. Explain mindfulness techniques that can be incorporated into their daily workflow.
3. Develop a plan to implement the concepts of mindfulness and self-compassion with learners.

Intended Participants: This workshop targets medical educators who teach or mentor different levels of learners.

Methods: We have created an engaging, interactive virtual workshop. The workshop starts with an attention-grabber video. Participants will complete a short online self-compassion assessment and discuss findings using think-pair-share. A short didactic will introduce mindfulness and self-compassion. We will discuss the reasons for burnout, and how these techniques can promote resiliency in ourselves and our learners. Didactics will include brief activities from Neff's book. We will discuss real-life cases in small groups where a learner or colleague is showing signs of burnout. Workshop leaders will moderate small groups where they develop an approach to reframe for mindfulness and self-compassion. We will debrief as a large group with groups share their approaches. Finally, participants will write down a take-home point and commitment to act. We will share a link to a digital share drive of resources that faculty can use at their institution.

Activity Timeline::

1. Introduction: "Attention-Grabber" video; Introductions; Review session goals and objectives (10 min)
2. Self-compassion self-assessment and think-pair-share: Neff self-compassion assessment; discuss findings (what surprised them? What did they learn about themselves? Any themes?) (10 min)
3. Didactic + Large Group Activity: Introduce 21st century mindset; Discuss self-compassion and mindfulness; Discuss difficulties residents have with concepts and how faculty can promote them; Neff activities as intensifiers throughout didactics (20 min)
4. Small Group Activity: Discuss 2 cases and how to promote mindfulness/self-compassion; Debrief as large group sharing what was learned and how they approached cases. (25 min)

5. Wrap-up: Share a take-home point about something they learned in group chat; Create commitment-to-act for how to use concepts with learners; Distribution of materials via QR code

Take-Home Tools:

Self-assessment tool: <https://self-compassion.org/self-compassion-test>

Worksheet (via QR code): key points, group discussion points, mindfulness and self-compassion exercises/activities, and space to write call-to-action

Emotional Intelligence for a Diverse Workplace

Nyquist, Julie G. (1); Olson, Holly (2)

(1) *Department of Medical Education, Keck School of Medicine of USC;*

(2) *University of Hawaii John A. Burns School of Medicine*

Workshop Description: The importance of emotional intelligence (EQ) in enhancing environments is well supported but its usage is still evolving in academic medicine. Participants will complete a self-assessment based on the work of Gardenswarz and Rowe to examine four elements of EQ for diverse work environments: Affirmative Introspection, Self-Governance; Intercultural Literacy and Social Architecting. Scenarios will explore new ways each of us can enhance results in our diverse working and learning environments through changing our own perspectives.

Rationale:

Outcome Objectives:

Intended Participants:

Methods:

Activity Timeline:

Take-Home Tools:

From Struggle to Success: Remediation Strategies for Learners Struggling with Professionalism

Itani, Reem (1); Christman, Grant (1,2); Stokke, Jamie (1,2)
(1) Children's Hospital Los Angeles; (2) Keck School of Medicine of USC

Workshop Description: As the academic medicine landscape continues to evolve, ensuring a high degree of professionalism in learners continues to be a crucial factor to their success as future independent physicians. However, there is little direction as to how to assess and correct professionalism lapses in learners. This workshop is designed for physicians, training program leadership and mentors to assist with diagnosing and remediating learners struggling with professionalism.

Rationale: Medical educators have a responsibility to ensure that graduates can practice safely and competently. The transition from medical student to resident is one of the most transformative times in a physician's development: long work hours, a trainee's growing experience, and work compression all collide. Research suggests that exaggerated stress responses can emerge under these circumstances, leading to lapses in professional behavior. Many trainees need personal support to maintain professional competence, but a few trainees will require considerable resources to accomplish this goal. While the importance of professionalism is considerable during a trainee's career, remediation and feedback can be challenging and sometimes awkward, hence we developed a 75-minute workshop to prepare physician educators with skills to diagnose and remediate learners struggling with professionalism.

Outcome Objectives:

1. Diagnose professionalism deficits in a learner using the Dreyfus model and SOAP approach
2. Develop a plan to deliver feedback to a learner struggling with professionalism using nonviolent communication (NVC)
3. Create a remediation plan for a learner with professionalism lapses
- 4.

Intended Participants: Physician educators

Methods: ASCI techniques used: audio clip, think-pair-share, small-groups, reflection

Activity Timeline:

1. Introduction: Introduce speakers, play a 2-minute audio clip of a learner in difficulty (LID)
2. Part I-Diagnose: Discuss Drefyus Model and SOAP tactic; Small groups-"diagnose" the LID from intro clip using the DDD worksheet
3. Part II-Deliver: Discuss Nonviolent Communication; small groups-practice delivering feedback to the LID
4. Part III-Develop: Small groups-discuss strategies that worked to help remediate LIDs
5. Recap and Evaluation: Review DDD acronym and tools available, word cloud activity, address questions, evaluation form of workshop

Take-Home Tools:

"DDD Worksheet" – a Google doc linked to a QR code that includes information and resources from the lecture

A 360 assessment tool that can be modified to the staff filling out the tool assessing the learner

Beyond the Case Study: Promoting Meaningful Learning through Backward Design

Heck, Amber (1); Chase, Amanda (2)

(1) University of North Texas Health Science Center;

(2) Nova Southeastern University College of Allopathic Medicine

Workshop Description: Through innovative resources and an interactive learning format, the facilitators will guide an exploration of the challenges of developing curriculum content. Using backward design, attendees will identify a topic within their discipline, draft a learning outcome, and design an activity that supports achievement of the outcome. The facilitators will demonstrate how to align activities with intended learning outcomes and distribute a menu of active learning activities.

Rationale: In health professions education, it is critical that learners apply and integrate knowledge to solve clinical problems. To achieve this, many educators rely, almost exclusively, on the use of case studies to support learning, with little consideration of other methods. This is an example of forward design or approaching a session with the activity in mind first, and then attempting to draw connections between the activity and the desired outcome. However, case studies are not always the best strategy to support achievement of the desired outcome. Through flipped classroom active learning, the learner can build upon prior knowledge and develop meaningful understanding that supports the application of knowledge to problem solving. To promote active learning effectiveness, educators should rely upon backward design, identifying the learning outcomes first, and then designing classroom activities which support learner achievement of those outcomes.

Outcome Objectives:

1. Apply the principles of backward design to align instructional approaches with intended learning outcomes to support meaningful learning.
2. Generate learning outcomes which consider the new and prior knowledge that learners must use, connect, and apply.
3. Create session plans and resources that align with best practices in backward design and support the application of knowledge.
4. Assemble a diverse portfolio of active learning activities that support a variety of Bloom's verbs.

Intended Participants: New and experienced faculty and administrators who wish to effectively design and implement active learning curricula.

Methods: This is an interactive workshop that will use both small and large group experiential activities to encourage application of best practices in backward design. Participants will reflect on the utility of backward design and flipped classroom active learning in promoting meaningful learning, share challenges and opportunities, and create goals for future instructional activities.

Activity Timeline:

1. Introduction: Facilitators will introduce backward design and describe its relationship to application, integration, and knowledge transfer. Facilitators will use polling and Socratic questioning to enhance audience participation. (15 min)
2. Apply Backward Design: Small groups of participants will generate an objective and an outcome using a backward design template. Groups will share in a large group report out. (15 min)
3. Active Learning Menu: Facilitators will demonstrate how to align instructional activities with learning outcomes using Bloom's verbs and distribute a menu of active learning activities. (15 min)
4. Aligning Activities with Outcomes: Individually and then in small groups, each participant will utilize the backward design template to create an active learning session and receive feedback from peers. Participants are encouraged to explore their own practices and work toward optimizing connection to prior knowledge. (20 min)
5. Wrap-Up: Participants will share challenges, opportunities, and goals for future instructional activities. Facilitators will guide closure and provide final thoughts. (10 min)

Take-Home Tools:

Attendees will take home a backward design template, a menu of active learning activities, and a planned session to implement at their home institutions.

Narrative Medicine Methods to Promote Interprofessional Education and Practice

Llobrera, Kairos; Schaff, Pamela; Wright, Erika
Keck School of Medicine of USC

Workshop Description: Within the last decade, health education certifying boards, health profession schools, and healthcare provider organizations have recommended, if not required, interprofessional education for students and clinicians as a means to strengthen healthcare teams and improve patient care. Differing from practical, task-based team building exercises, narrative medicine offers more nuanced approaches to collaborative team development. Participants will explore and engage in narrative medicine methods of close reading, reflective writing, and attentive listening to stories as strategies for flattening hierarchical divides and finding common ground within and across healthcare teams, professions, and specializations. At the conclusion of the workshop, you will gain narrative medicine tools and skills that can be used to promote interprofessional collaboration in both educational and clinical settings.

Rationale: In recent decades, health education certifying boards, health profession schools, and healthcare provider organizations have recommended, if not required, interprofessional education for students and clinicians as a means to strengthen healthcare teams and improve patient care. (1) Differing from practical, task-based team building exercises, narrative medicine offers more nuanced approaches to collaborative team development. Through the practice of its signature methods of close reading, reflective writing, and attentive listening to stories, narrative medicine promotes relationality and intersubjective contact as strategies for flattening hierarchical divides and finding common ground within and across healthcare teams, professions, and specializations.(2) At the conclusion of the workshop, participants will gain narrative medicine tools and skills that can be used to promote interprofessional collaboration in both educational and clinical settings.

Outcome Objectives: By the conclusion of this presentation, participants will be able to:

1. Define interprofessionalism and describe the rationale for its incorporation into medical education and practice.
2. Describe the core features of narrative medicine and their value to interprofessional and collaborative team development.
3. Experience close reading/observation and writing activities.
4. Discuss the application of narrative medicine methods as strategies for promoting interprofessional collaboration in both educational and clinical settings

Intended Participants: Medical school and residency program faculty, curriculum deans, program directors, medical students, and residents.

Methods: This workshop is designed to be interactive and engaging. The session will reflect a mix of group discussion, mini-didactic presentations and opportunities to learn and practice aspects of curriculum development and to consider assessment methods.

Activity Timeline:

00:00 – 00:05 Introduction of workshop facilitators and participants
 00:05 – 00:10 Introduction of the concept of interprofessionalism in healthcare
 00:10 – 00:15 Narrative medicine’s features and methods in the context of interprofessional education and practice
 00:15- 1:00 Narrative medicine activity
 1:00 – 1:15 Wrap up and discussion

Take-Home Tools:

Close reading

Reflective writing
Attentive listening

References:

- 1) Josiah Macy, Jr. Foundation. 2012 Annual Report: Accelerating Interprofessional Education. New York: Josiah Macy Jr. Foundation, 2012. <https://macyfoundation.org/publications/2012-annual-report-accelerating-interprofessional-education>; World Health Organization. Framework for Action on Interprofessional Education and Collaborative Practice. Geneva: WHO, 2010; Grbic, Douglas et al., "Interprofessional Educational Opportunities and Medical Students' Understanding of the Collaborative Care of Patients." AAMC Analysis in Brief, Vol. 14, No. 10, October 2014.
- 2) Charon, Rita, et al. eds. The Principles and Practice of Narrative Medicine. New York: Oxford University Press, 2017.

Integrating Sex and Gender Based Medicine into Health Professional Education: Tenets and Tools

Kwolek, Deborah Gomez (1); Kling, Jewel (2); Templeton, Kimberly (3); Werbinski, Janice (4)
(1) *Harvard Medical School*; (2) *Mayo Clinic Alix School of Medicine*; (3) *University of Kansas Medical Center*; (4) *Western Michigan University Homer Stryker MD School of Medicine*.

Workshop Description: Sex and gender based medical education (SGBME) incorporates the knowledge of sex and gender differences into health professional curricula, to personalize the care of all patients. This interactive workshop lists gaps in current curricula, demonstrates novel SGBME tenets from an international interprofessional education summit, introduces an innovative tool for literature reviews, and guides participants in brainstorming to effect positive change at their home institutions in SGBME.

Rationale: Sex and Gender Based Medical Education (SGBME) is relevant to all disciplines and affects every individual. While much of current research does not disaggregate or report data based on sex or gender, existing data on sex and gender are not consistently incorporated into healthcare professional education. The incorporation of SGBME into all stages of the learner continuum will entail a fundamental change in how healthcare topics and faculty development materials are fashioned. This workshop gives participants a guided experience utilizing novel tenets and tools to assist all teachers and learners in the incorporation of SGBME into health professional curricula.

Outcome Objectives:

1. Delineate curricular gaps in sex and gender based medical education (SGBME).
2. Demonstrate the novel four sex and gender health educational tenets.
3. Describe tools and techniques for incorporating SGBM into curricula at all levels.
4. Develop an action plan to increase SGBM awareness in the classroom and your institution.
- 5.

Intended Participants: All learners and educators.

Methods: This interactive workshop introduces a novel educational tool: the four sex and gender health educational tenets. Faculty are nationally and internationally recognized experts in medical education with experience at all levels of learners across health professions. Large group discussions, small group exercises, participant interactions, brainstorming, and a large group debrief will engage learners to reimagine curriculum with sex and gender personalization in mind. After introductions and an overview of SGBME, the importance of sex and gender in the care of patients, and the critical need to bring knowledge of SGBME into current curricula across the expanse of medical education (UME, GME, CME) and at all levels will be discussed, including basic science, clinical and educational research and publications. Reports from a recent international interprofessional summit on SGBME education, and the development of the four tenets will be presented.

Small group discussions will explore these concepts. Participants will have a guided introduction to the use of the four tenets. Development of educational resources for SGBM will be discussed including the use of a novel pubmed search tool. In small and large group settings, participants will 1) identify barriers to change at their institutions 2) brainstorm action plans to address barriers, and 3) identify opportunities to incorporate tenets into curricular design, engaging students, faculty, and educational leadership in these efforts. In a final debrief, participants will reconvene, share insights gained, and propose action plans to promote curricular change.

Activity Timeline:

1. 1-10 Introductions and overview
2. 11-20 Why SGBM is crucial in research and education: SGBME Summits
3. 21-25 New tenets for Sex and Gender Education for Interprofessional Education
4. 25-45 Guided small group exercise using the tenets of SGBME to evaluate current educational programs
5. 46-55 Mobilizing students to develop educational resources in SGBM. Novel PubMed search Tools
6. 56-65 Guided small group exercise to brainstorm the inclusion of SGBM in your teaching/ curricula.
7. 66-75 Regroup for debriefing, summary and action plan for curricular change

Take-Home Tools:

Four sex and gender health educational tenets

Sex and Gender Pub Med Search Tool and Advanced Sex and Gender Pub Med Search Tool

Electronic list of resources: textbooks, journals articles, summit proceedings.

Non-Violent Communication in our Workspaces and Our Lives

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Workshop Description: Non-Violent communication skills can help us build and maintain positive and honest relationships inside and outside the workplace. Participants will gain awareness, knowledge and initial skills for use of this powerful step by step process - to state: 1) what we observe; 2) our feelings about the actions; 3) our need, taking responsibility for our own emotions; and 4) the exact action we request to enhance our lives. The workshop will use pop-quizzes to assess understanding and paired activities to practice the four-step process. Much fun will be had by all as we work hard practicing these challenging skills.

Rationale: Non-Violent Communication is a skill set developed by Marshall Rosenberg for use with individuals as part of his work as a psychologist and with tribes and nations in his work as a negotiator. These Principles can be used by health care providers within their workplaces and lives to enhance wellbeing. Through use of four basic principles and the accompanying skills participants can make requests to better meet their needs and those of the "other." Quoting Dr Rosenberg, "Through its emphasis on deep listening - to ourselves as well as to others - NVC fosters respect, attentiveness, and empathy and engenders a mutual desire to give from the heart."

Outcome Objectives: Participants will be better able to:

1. Describe communication styles that block compassion.
2. Utilize the four components of NVC: 1) making observations, 2) identifying and expressing our specific feelings, 3) describing our need that is not being met, and 4) making a specific request to better meet our need.
3. Make a plan to address a current personal or workplace challenge using the four components.

Intended Participants: Health care professionals at any level from student to senior administrator.

Methods: This workshop will intersperse brief didactics, with short quizzes and paired activities to help participants achieve the objectives.

Activity Timeline:

1. 0 – 15 minutes: Introduction of session, a quiz and a paired activity - completing Step 1: Stating what we observe – a specific behavior of another person.
2. 16- 30 minutes: Discussion of Step 2, a quiz and a paired activity; completing Step 2: Identifying and expressing our specific feelings about the action described in Step 1.
3. 31- 45 minutes: Discussion of Step 3, a quiz and a paired activity; completing Step 3: Describing our need and taking responsibility for our own emotions.
4. 46- 65 minutes: Discussion of Step 4, a quiz and a paired activity; completing Step 4: the exact action we request to enhance our lives.
5. 66-75: Questions, takeaway messages, and completion of the workshop evaluation.

Take-Home Tools:

Two worksheets - Worksheet for NVC to Make a Work Request 2024; Worksheet for NVC to Make a Personal Request 2024
The Feeling Wheel by Bret Stein, 2011

Automatic Negative Thoughts: Reframing Cognitive Distortions to Improve Wellbeing

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Charles Drew University

Workshop Description: Automatic negative thoughts (ANTS) are due to negative underlying core beliefs. ANTS are universal, self-sabotaging and trigger a downward spiral leading to a cycle of negative thoughts, emotions, and unhelpful behaviors. Participants will identify specific ANTS utilized with challenges. They will participate in interactive insightful activity; by reflecting on the associated mood and evidence for an identified ANT to reframe with a replacement positive thought to improve wellness.

Rationale: The clinical learning environment is required to support the wellbeing of the healthcare team for provision of high-quality patient care. Automatic negative thoughts and problematic mindsets are common and associated with depression, anxiety and other mental disorders that lead to fragility, team dysfunction, conflict, and inefficiency. These cognitive distortions are especially prevalent in clinical learners with limited knowledge and experience who are exposed to challenging scenarios with the risk of medical errors. Studies have shown that cognitive behavioral therapy using cognitive restructuring and reframing of negative thoughts to rational thinking is effective and can be taught.

Outcome Objectives:

1. Be aware of different types of problematic mindsets & automatic negative thoughts
2. Identify one's own cognitive distortions
3. Practice the Reframing & How to Stop Negative Thinking activity

Intended Participants: Faculty, residents, medical students, staff, administrators

Methods: This is an interactive and educational workshop that will use both small group and large group discussions to encourage reflective and problem-solving outcomes. Polls everywhere will be used to provide immediate feedback.

Participants will engage with evidence demonstrating that automatic negative thoughts and problematic mindsets are cognitive distortions leading to self-sabotage, distorted perception of reality and adverse personal and team outcomes.

Participants will learn how to challenge automatic negative thoughts using cognitive restructuring and reframing negative thoughts in real time.

Activity Timeline:

1. PowerPoint interactive presentation describing Automatic negative thoughts such as "catastrophizing", "should statements or "All-or-nothing thinking" and problematic mindsets such as "Maladaptive Perfectionism", "fixed mindset" or "Impostor Phenomenon": 10 minutes
2. Reflective Activity: identifying your ANTS, participants will complete survey to identify specific ANTS they utilize when facing challenges in life: 15 minutes
3. Presentation on Reframing & How to Stop Negative Thinking in 6 Steps: 20 minutes
4. PowerPoint interactive Reflective Activity; participants in groups will practice the Challenge Automatic Thoughts worksheet which includes the 6 steps of 1) Recognize and Isolate the Thought, 2) Write Down the Thought, 3) Identify the Distress Level, 4) Identify the Cognitive Distortion, 5) Challenge & Reframe Your Thoughts and 6) Reevaluate the Distress Level: 20 minutes
5. Report out; Debrief & brief survey to measure satisfaction: 10 minutes

Take-Home Tools:

Self-screening tools for Automatic Negative Thoughts and the Challenge Automatic Thoughts worksheet
survey
Worksheet for creating an Automatic Negative Thoughts (ANTS) workshop

Positive Intelligence: Intercepting Your Saboteurs and Mastering Your Sage Powers to Improve Well-being

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(3) *University of Texas-Rio Grande Valley*

Workshop Description: Positive intelligence (PQ) is a concept coined by author Shirzad Chamine, and refers to positive mental fitness. By understanding our inner-critic and strengthening our mental fitness 'muscles' we can shift the power our negative emotions have on us to improve our positive emotions and ultimately flourish. This workshop will demonstrate how to use the PQ concepts to 1) better understand how we self-sabotage and 2) Utilize the sage perspective to reframe and move forward to a healthier wellbeing.

Rationale: The current state of medical education is plagued with burnout and poor wellbeing. As many as 54% of physicians have poor wellbeing and as many 60% of residents and 50% of medical students suffer from burnout. While higher administrative burdens, time pressures and decreasing autonomy are all factors that contribute to burnout, our own personal expectations of perfectionism and feelings of inadequacy can ultimately lead to high cognitive loads and cycles of burnout and poor wellbeing. The concept of positive Intelligence (PQ) describes how we tend to self-sabotage by generating our own negative emotions resulting in self-doubt, anxiety, and frustration. This in turn can result in poor performance, unauthentic personal and professional relationships and ultimately poorer wellbeing. Overcoming this cycle can include reframing processes to enhance your perspective and take meaningful action.

Outcome Objectives: This workshop will demonstrate how to use the PQ concepts to reframe and encourage positive thinking to improve performance, relationships, and overall wellbeing. By the completion of this workshop, faculty will be able to:

1. Identify signs and symptoms of the inner-critic and identify their own 'saboteurs' that may be contributing to negative emotion;
2. Identify ways to hijack the inner-critic both proactively and when the self-sabotage is occurring
3. Summarize the sage perspective and the three gifts associated with it and
4. Identify the 5 sage powers (perspective, empathize, explore, innovate, and navigate) and help shift the balance of power to maximize success and ultimately improve wellbeing.

These strategies can help both personally and in working with learners at all levels of training.

Intended Participants: Novice to advanced academic faculty

Methods: Large group didactics and case presentation, small group discussions, debrief and self-reflection activity

Activity Timeline:

1. 0-5 mins: Introduce presentations, LOO, session schedule
2. 5-10 mins: Attention grabber with the story of the Greek king told by Chamine and then review of Saboteur scores done as pre-work or as people come into zoom room
3. 10-25 mins: Didactic Power Point: Introduce PQ and how to identify and hijack the inner critic
4. 25-45 mins: Small group discussion- what are your top 3 saboteurs and how have you seen them in action this last month?
5. 45-60: Discussion of 5 sage powers/3 gifts and then Large group cases (3 cases) on which powers may help
6. 60-67: Debrief and wrap-up
7. 67-75: Self-reflection and commitment to act exercise followed by evaluation

Take-Home Tools:

Enhancing Assessment Practices: Workshop on Validity, Reliability, and Item Analysis

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(1) *Asian Institute of Medicine, Science and Technology, Department of Biochemistry;*(2) *Asian Institute of Medicine, Science and Technology, Unit of Psychiatry*

Workshop Description: The uniqueness of this workshop is the hands-on approach for test item analysis and to assess the validity and reliability of assessment. Developing good test items is an iterative process, and item analysis uses test results to feedback and to evaluate instructional effectiveness. This workshop will help medical educators to enhance their quality of assessment and evaluation. This workshop will address the standards for educational and psychological testing.

Rationale: The need to obtain reliable and valid assessments is critical for the learning process in medical education. Creating a reliable and valid test instrument for the classroom is a time-consuming procedure that requires medical educators to thoroughly consider the assessment results' content, goals, and outcome. This workshop will be build confidence in conducting assessments and helps make the educators more reliable, valid, fair, and trustable. It will also prove that the stakeholders and reviewers are following good assessment practices.

Outcome Objectives: This workshop focuses on the test item-writing guidelines and use item analysis to refine and improve the validity and reliability tests; Review the test and item statistics. By the end of the workshop, attendees will be able to:

1. Integrate the test item analysis to evaluate the overall quality of a test.
2. Interpret a test item analysis.
3. Use test results for feedback and to evaluate instructional and assessment effectiveness.

Intended Participants: Healthcare professionals, Curriculum planners, Academics, Community bodies

Methods: The session will be an audiovisual presentation designed to introduce the participants ways to enhance and improve multiple choice test construction from the item analysis. The multiple choice written examination is a significant formative and summative evaluation tool for many health professions.

Great valid examinations are difficulty to construct. Using statistical data from an Item Analysis can provide direction to both novice and experienced faculty members as well as strengthen the reliability and validity of these examinations.

- I. Presentation
- II. Hands-on discussion with sample questions and test analysis.
- III. Take home message and reflection.

Activity Timeline:

1. Audio visual presentation on the indices related to item analysis (15 min)
2. Hand-on discussion:
 - a. to locate each test index with analysis reports.(15 min)
 - b. to Identify target values for each index, depending upon your testing intentions (20 min)
 - c. Hands-on discussion make informed decisions about whether to retain, revise, or remove test items (15 min)
3. Concluding the session with feedback (10 min)

Take-Home Tools:

Item analysis is an empowering process. Knowledge of score reliability, item difficulty, item discrimination, and crafting effective distractors can help medical educators make decisions about whether to retain items for future administrations, revise them, or eliminate them from the test item pool. Item analysis can also help an instructor to determine whether a particular portion of course content should be revisited. In any case, all indices should be considered together before making decisions or revisions. One important thing to always keep in mind is that decisions about item revision should be based on the extent to which item performance matches your intent for the item and your intent for the overall exam.

Simulation-Based Education: An Introduction to Design, Development and Deployment

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(1) Keck School of Medicine of USC; (2) LA General Medical Center

Workshop Description: Simulation-based education (SBE) has gone through significant advancement in the last decade with the integration of new methodologies and technologies. Yet, the fundamental educational goals have not changed. This workshop will provide the basics of the implementation of SBE for a variety of learner groups include Undergraduate Medical Education, CRNA programs and Residents. We will guide participants through a process of needs assessment and ultimately develop new ideas for their institution through interactive exercises.

Rationale: Simulation-based education (SBE) has emerged as a valuable and effective strategy for the development of skills and knowledge among healthcare professionals. This approach serves as an essential step in medical education, offering a structured and effective method for students to develop and enhance their abilities in a controlled environment. By integrating simulation-based training into the curriculum, educators can better prepare future healthcare professionals for real-world clinical challenges, ultimately leading to improved patient care outcomes. We will examine how simulation improves clinical skills, patient safety and health professions education. Additionally we explore the challenges and limitations associated with medical simulation and discuss current trends. As SBE continues to evolve it is essential to consider its role in advancing the education of health care professions to enhance patient safety and quality care.

Outcome Objectives:

1. Analyze SBE methodologies and discuss implications
2. Generate examples of using SBE in your curriculum
3. Apply principles of educational theory to SBE
4. Compare types of SBE and their use and application in your institution

Intended Participants: Health professions educators at all levels.

Methods: We will begin by presenting the core elements of simulation-based education and best practices in design and deployment. Examples of SBE in use for medical, nursing and interprofessional staff education will be discussed. Breakout groups will provide the opportunity for participants to collaborate with others in their field and develop recommendations for SBE. There will be a Q&A session at the end followed by a brief wrap-up.

Activity Timeline:

1. 30 min Overview of simulation-based education (development, design and deployment)
2. 30 min Review of SBE methodologies for use in teaching patient safety
3. 20 min Breakout groups (a) medical/residency education (b) interprofessional and nursing staff education
4. 10 min Full group summary and closing

Be the Change You Wish to See: Fostering a Healthy Program Culture Through Emotional Intelligence

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(1) *University of Southern California*; (2) *University of South Alabama*;
(3) *Children's Hospital Los Angeles*

Workshop Description: Emotional intelligence (EI) is documented in the literature as having organizational and individual benefits and is a component of creating healthy and inclusive dynamics within training programs. In this workshop, leaders in medical education will be introduced to the core components of EI and explore enhancing positive program culture. Participants will engage in a variety of interactive skill-building exercises culminating in a plan of action for enacting within their own program.

Rationale: Emotional intelligence (EI) is the ability to recognize and manage emotions in oneself and also manage the relationships around them (1). Leaders with high levels of EI are able to foster positive workplace culture and drive growth in EI-related skills in their employees (1). Such concepts can be applied to medical education leadership particularly as greater importance in the last decade has been placed on fostering supportive learning environments and building trainee competency within the domains of interpersonal communication, professionalism, and interdisciplinary teamwork (2). Higher EI is associated with improved development of these competencies, along with improved physician-patient relationships, stress management and organization skills in trainees (3, 4). Furthermore, high levels of EI in educators have been shown to lead to improved clinical teaching effectiveness (5).

Outcome Objectives: By the end of this workshop, learners should be able to:

1. Define the four elements of Emotional Intelligence (EI)
2. Articulate how EI impacts program culture and trainees
3. Practice utilizing the four elements of EI via structured skill-building activities
4. Create a personal plan of action to apply aspects of EI to their leadership style and training programs

Intended Participants: Program Directors/Residency & Medical education Leadership

Methods: The intervention will focus on 20 participants in educational leadership positions. This 75 minute workshop is designed to build knowledge and skills in emotional intelligence that leaders can use to improve the culture at their institutions. Prior to the workshop, attendees will complete the VIA character strength survey as a pre intervention assessment. Components of EI will be introduced in brief didactic presentations and enforced with interactive small group exercises through think-pair-share, emotion recognition, role play, and the practice of positive psychology. At the end of the session, attendees will complete a written self-reflection about how their experience in the workshop relates to their program and develop a personal plan of action regarding their character related leadership skills.

Activity Timeline:

1. 0-5 min: Introduction & Objectives
2. 5-21 min: Self Awareness Overview
 - Didactic presentation
 - Small group activity: think pair share
 - Large group discussion
3. 21-37 min: Self Management Overview
 - Didactic presentation
 - Small group activity: emotion recognition
 - Large group discussion
4. 37-53min: Social Awareness Overview
 - Didactic presentation
 - Small group activity: role play
 - Large group discussion

5. 53-69 min: Relationship Management Overview
 - Didactic presentation
 - Small group activity: positive psychology exercise
 - Large group discussion
6. 69-75 min: Closing: Reflection & plan of action

Take-Home Tools:

1. Results of individual VIA character strength surveys
2. Wheel of emotion
3. Individual plan of action

**Promoting Inclusiveness in the Clinical Learning Environment:
Actionable Steps for Every Educator**

Calles, Ignacio; Diller, David
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Workshop Description: Providing an inclusive learning environment to all learners is essential for facilitating their growth and success. This workshop will explore the various behaviors and practices that can be implemented to promote inclusion and belonging in the healthcare setting. Participants will engage in activities to identify both the challenges that currently exist, and the best practices that can be implemented to promote learner inclusion. At the conclusion of the workshop, participants will have a toolkit that can be used at the bedside for future students in the clinical learning environment.

Rationale: Medical student matriculants are increasingly more diverse. These new learners are accompanied by little research or guidance to prepare educators for their unique needs. Particularly, the clinical learning environment is an unpredictable setting filled with competing interests, emotions, and desires for both students and educators that remains less inclusive to underrepresented and LGBTQ students. In line with the AAMC's strategic plan to both support students and improve inclusivity, we present an evidence-based approach to understanding and improving inclusiveness in the clinical learning environment. Rather than focus on existing gaps and deficits, we aim to teach educators to leverage concepts and best practices that have been identified by students and standout educators to ensure they model and promote inclusiveness and belonging in their work and teaching.

Outcome Objectives: At the end of the workshop learners will be able to:

1. Describe a model for promoting inclusiveness and belonging.
2. Identify opportunities to apply best practices to promote inclusiveness and belonging.
3. Create a plan to promote inclusiveness for individual students on a healthcare team.

Intended Participants: Content will be geared toward senior educators within the clinical learning environment including attending physicians, fellows, and residents who lead, instruct, and assess medical students.

Methods: The workshop will begin with a short didactic component to introduce terms and concepts. After describing the individual factors and behaviors identified as promoting inclusiveness in the clinical learning environment learners will be divided into small breakout groups. The groups will be presented individual cases derived from student and educator narrative accounts of standout inclusive behaviors. These scenarios will ask learners to apply newly learned concepts to support students through challenging situations. Breakout groups will come together to share their diagnosis of the situation and course of action they feel would best promote inclusiveness. Each scenario will be followed by specific, tangible learning points for use in real practice. The session will conclude with a summary of key takeaways, and a handout will be distributed that features actionable steps for future reference.

Scenario 1

You are the attending on a teaching service with two medical students. One student speaks fluent Spanish and the other does not. Two new admissions come in overnight, one spanish-speaking and one not. The bilingual student has previously followed spanish-speaking patients and appeared to have an easy time building patient rapport and communicating information.

What might you consider when assigning these new patients?

What statements or acknowledgments might you make to the team regarding language?

How would you assess the risks and benefits of assigning this student another spanish-speaking patient?

Teaching points

- Underrepresented students have complex experiences related to building relationships with similar identities (fulfillment vs losing out on educational opportunities or tokenization)
- Explicitly acknowledge this dynamic when appropriate
- Offer students the opportunity to opt in to additional patient care responsibilities like translating or counseling without burdening them with an expectation to do so

Scenario 2

You are the attending on a teaching service that is discharging a patient today. This patient is a homeless Black woman who was initially admitted to the ICU for diabetic ketoacidosis. She was downgraded to your service after improving clinically with appropriate treatment. Social work was unable to secure placement for this patient after several days and she will be discharged today with homeless resources and a new prescription for insulin. A Black medical student has been following this patient and approaches to say they are concerned about this discharge plan. The patient disclosed to the student that her insulin was stolen from her while on the street and she isn't sure whether that might happen again.

Describe your approach to your student's concern.

What would you specifically tell the student about this situation?

What change, if any, would you make to the patient's treatment or plan?

Teaching points

- Students recognize physicians who deliver compassionate care to vulnerable patients as inclusive providers.
- Standout providers demonstrate this in direct delivery of patient care and in their teaching
- Even when outcomes or resolutions are sub-optimal, students recognize the responsibility and effort of their preceptors to meet patients where they are (psycho/social/economic)

Scenario 3

You are reviewing anonymous feedback from your medical students after a week of inpatient medicine. One of your evaluations reads: "This attending did not attempt to get to know me. Their tone and body language seemed dismissive of a homosexual patient's concerns and this personally affected me because I am also LGBTQ."

How does that make you feel?

What steps might you take in the future to avoid unintentionally excluding students?

How might you attempt to contact this student and address the situation?

Teaching points

- Casual social interaction is vital for relationship building
- Open-door policy, group messaging applications, formal time and space for socialization (predetermined group lunches, etc)
- Intentional questioning to learn more about a student and individualize their experience (what extracurriculars are you involved in? Research interests? These can clue you in to more subtle identities)

Activity Timeline:

1. Intro to inclusiveness in the clinical learning environment: large group didactic
2. Scenario 1 breakout
3. Group discussion
4. Scenario 2 breakout
5. Group discussion
6. Scenario 3 breakout
7. Group discussion
8. Wrap up with summary of take-home points and distribution of handouts

Take-Home Tools:

Based on take home points above

Enhancing Communication Skills: Active Listening and Thoughtful Responding

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(2) *Southwestern University PHINMA School of Medicine;* (3) *Keck School of Medicine of USC*

Workshop Description: In this workshop, healthcare professionals are invited to explore communication strategies, crucial for the effective exchange of information. Health care providers play two roles in every conversation - messenger and receiver, switching roles throughout any conversation. The skills of active listening and thoughtful responding are instrumental in shaping any conversation. Through a blend of large and small group activities, attendees will practice these skills and learn methods they might use to help their own learners build these skills.

Rationale: Effective communication and teamwork are foundational to delivering high-quality, safe patient care. This is underscored by the ACGME Core Competency of Interpersonal and Communication Skills, mandating the ability of medical professionals to both transmit and receive information effectively. Yet, communication failures remain a substantial burden, contributing to malpractice claims and financial strain, with specific cases involving both provider-patient and provider-provider miscommunications (Derman, G, 2020). The dynamics of modern healthcare necessitate a seamless flow of communication from the messenger delivering the message, towards the receiver (Janet, A, 2018). Health care providers play both roles in every conversation - messenger and receiver, switching roles throughout any conversation. The skills of listening actively and responding thoughtfully are instrumental in shaping any conversation. This workshop focuses on building these critical skills.

Outcome Objectives: By the end of the session, participants should be able to:

1. Enumerate key barriers to our own listening in professional conversations.
2. Better guide conversations through the use of active listening and thoughtful responding.
3. Share these skills with your own learners.

Intended Participants: Health and allied health professionals (physicians, physician educators)

Methods: The workshop will be divided into the segments. The initial segment will include a brief introduction, use a short video clip and a small group brainstorm on personal barriers to listening in care-based conversations. The second segment will include a brief didactic presentation on techniques for active listening and thoughtful responding followed by small group activity to practice these skills. The final segment will include open discussion and take home messages.

Activity Timeline:

1. Introduction (10 minutes): Welcome, overview, and 3-minute video, Hampsten 2016, "How miscommunication happens" that provides an outline of communication challenges.
2. Small-Group Activity (15mins): Brainstorming on key barriers to our own active listening in professional conversations - small groups of participant are challenged to share their own stories that highlight their personal barriers (e.g., different interpretation of words, own biases and filters based on our identities, focusing on what "I" will say next)
3. Brief Didactic on Active Listening and Thoughtful Responding (15 minutes): principles (e.g., mindfulness, deep listening, empathic responding) and techniques (e.g, listen without interruption, and respond with respectful, non-judgment curious questions.
4. Small Group Activity – Skills practice (20 minutes): A case of an initial patient consultation will be used to provide practice in empathic listening, followed by practice in thoughtful responding.
5. Conclusion (15 minutes): Summary, Q&A, and evaluation.

Take-Home Tools:

1. Active Listening Guide

2. References and Links to Online Resources

References:

- 1) Janet, Alexandra, Cornett., Craig, E., Kuziemy. (2018). Team based communication and the healthcare communication space. *Journal of Health Organisation and Management*, 32(6):825-840. doi: 10.1108/JHOM-07-2017-0189
- 2) Giray, Derman. (2020). How does interpersonal communication affect health and patient safety. *International Journal of Social and Economic Sciences* 10(1):49-53

Raising the Bar: Scaffolding Undergraduate Students to Conduct Qualitative Research

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Workshop Description: Mark out a game plan to tackle qualitative research with a junior learner who has not done it before. Select the best fit research assistant for supporting qualitative research. Build an understanding in them of what comprises qualitative research and how they can facilitate obtaining purposeful testimonies. Generate tools common to qualitative research with your learner. Create a checklist for getting the work done in a timely fashion.

Rationale: Current health inequities can persist if studies do not interrogate how or why processes or human behaviors occur. Quantitative research can answer the questions of how much or how many, but often researchers are left to speculate about why or how events of interest come to pass. Qualitative research is especially helpful in the field of medical education to obtain insight on how/why learners apply information or make specific clinical decisions. Moreover, participants can provide more context that can inform why they could or could not assimilate some educational pieces or how they would plan the design of future curricula from their perspective. Building the capacity to conduct qualitative research to complement quantitative research is necessary for advancing medical pedagogy.

Outcome Objectives: At the conclusion of this workshop learners will be better equipped to:

1. Brainstorm a pathway for conducting qualitative research with a junior learner or as a junior learner
2. Delineate a timeline for completing a project
3. Explore how to standardize qualitative analysis in your area of interest with your learner
4. Plan how to avoid the pitfalls that can befall a qualitative project

Intended Participants: Medical educators, students anywhere along the spectrum of medical education.

Methods: We will use both large group didactics and small breakout groups to show the dimensions of how any research question can be investigated with qualitative methods. We will use interesting visuals to illustrate our concepts. We will use poll everywhere as well as novel worksheets electronically provided to support both small dyads and the large group in brainstorming and debriefing. We will conduct a post-mortem on our most recent research project to provide insights into how to avoid the mistakes we made and support future endeavors of the participants. Lastly, we will ask participants permission to follow up with them in assimilating our tools in their respective institutions.

Activity Timeline:

1. 0-5 min: introductions
2. 5-15 min: Power point slide of qualitative vs quantitative research finishing with a poll everywhere quiz and worksheet.
3. 15-30 min: postmortem of previous pilot qualitative research project
4. 30-45 min: Hypothetical research project timeline simulation followed by debrief
5. 45-50 min: Do's and Don'ts with the IRB qualitative research
6. 50-55 min: Slide presentation on coding qualitative research and extracting themes
7. 55-70 min: coding exercise with role-play followed by large group share
8. 70-75 min: closing, reflections, questions

Take-Home Tools:

1. Qualitative research guide worksheet/ flow chart
2. Coding worksheet
3. PDF of PowerPoint slides as a guide
4. Tools to adapt our methods to their own institution and research field

Professionalism: What Happens After the Lapse?

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(1) University of Texas-Rio Grande Valley; (2) University of Toronto; (3) University of Alaska Anchorage

Workshop Description: Professionalism has been recognized for centuries as fundamental to medical practice (1). Developing professionalism and maintaining professional conduct is a formative process. This workshop focuses on "after the lapse." Participants discuss conditions that can contribute to lapses in professionalism, review frameworks for reporting and responding to lapses and discuss appraisal and action alternatives.

Rationale: Professionalism has been recognized for centuries as fundamental to medical practice (1). In 2002, the ABIM published a "physician charter" in which they outlined three fundamental principles and a set of professional responsibilities which physicians should uphold (2). O'Sullivan and colleagues state that continuous professional development is key to medical practice and that individuals must be supported in learning the skills to continue to develop their professional identity for the rest of their career (1). Lucey and colleagues describe the principles and values of professionalism and identify teachable skills that enhance professional resiliency (3). Progress with respect to professionalism can be made with discussions that emphasize the fallibility of humans, the individual and collective responsibility of all physicians to accept the work required to sustain the values we espouse, and the importance of supportive cultures monitored for their impact on professionalism as well as by continuous learning and improvement by all (3). Developing professionalism and maintaining professional conduct is a formative process that must be consistently worked on regardless of whether an individual is a trainee or attending physician. There is a need to integrate education on professionalism into the medical curricula and continuing professional development sessions, on an ongoing basis for trainees as well as faculty. Gill et al discuss implementing a rapid response team and email notification systems for reporting a lapse and notifying the person identifying. After, the PACE (professional and appraisal evaluation committee) will ask the lapsee to identify the elements of professionalism breached by reflection with an action plan developed.

Outcome Objectives: After participation in the 75-minute online workshop the participants should be better able to:

1. Identify the "lapse" in professional behavior as it relates to patient care and the use of electronic media after reviewing a given case.
2. Identify other conditions that can contribute to lapses in professionalism.
3. Discuss an unprofessional interprofessional case example from a video short and/or script in a small group.
4. (Establish a framework for reporting and responding to lapses in professionalism i.e. Professionalism and appraisal evaluation committee PACE)

Intended Participants: Novice to Advanced Academic Faculty

Methods: Large group didactics and case presentation, small group discussions, role play, debrief and commitment to act.

Activity Timeline:

1. 0-5 minutes: Introduction of presenters, learning objectives and timeline;
2. 6-10 minutes: Ice breaker ; word cloud;
3. 11-25 minutes: Didactic Power Point: Professionalism;
4. 26-40 minutes: Small group #1: Case presentation, Role Play. Follow up on discussion points;
5. 41-55 minutes: Small Group #2: Sketch a framework for reporting and responding to a lapse with a partner using didactics tools and lessons from the role play session;
6. 56-65: Debriefing session: Summarize main take away points;
7. 66-75: Questions/Evaluations.

Take-Home Tools:

Handout on how to develop an action plan after a professionalism lapse.

Patient Care Simulations to Teach Health Professional Students to Communicate With Empathy

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Workshop Description: Empathy is an essential quality that health care professionals should display when providing care to patients. However, this skill is challenging to formally teach and assess. This interactive case-based workshop will describe a longitudinal intervention to develop and assess empathy in health professional students, with a focus on integrating simulations to improve self-awareness, perspective taking and communication with empathy.

Rationale: Data suggests that health care professionals with higher degrees of empathy and “soft” skill sets have demonstrated improved patient adherence to therapies, reduced adverse outcomes and have a decrease in malpractice lawsuits. While the impact of having empathetic providers is clear, there is differing data on standardized methods to teach and objectively assess students in developing and sustaining empathetic skill sets. The literature does however discuss the importance of specific traits such as self-awareness, communication skills and perspective taking in relation to empathy development. This workshop will engage participants in an interactive simulation and debrief that includes reflecting on a patient narrative, building self-awareness, practicing perspective taking and communicating with empathy.

Outcome Objectives:

1. Discuss the importance of developing empathy in health professional students to improve provision of patient care.
2. Describe the importance of self-awareness, perspective taking and communication skills in displaying empathy during provision of patient care.
3. Demonstrate strategies to integrate simulations to teach health professional students to communicate with empathy in provision of patient care.

Intended Participants: Health professional educators.

Methods: This session will be divided into four parts: 1) brief presentation on the importance of empathy development to the delivery of patient care, 2) team discussion on a patient case including a development of a provisional care plan, 3) Simulated patient monologue describing the patient’s perspective, 4) full group discussion regarding interaction with the patient and communicating with empathy.

Activity Timeline:

1. 10 minutes: Background and introduction
 - Why is empathy important to health professionals?
 - What is the current evidence and gaps?
2. 10 minutes: discussion on traits that engender empathy
 - How does self-awareness, perspective taking, and communication skills lead to increased empathy?
3. 15 minutes: Discuss integration of simulations.
 - Discuss simulations used as well as practical considerations for implementation.
 - Discuss the role of the standardized patient as both patient and evaluator.
4. 15 minutes: Simulation Activity (application)
 - Participants will have a chance to work through a sample simulation as a student.
5. 15 minutes: Guided Debrief
 - Debrief will focus both on the takeaways from the simulation, as well as application considerations for integrating into curriculum.
6. 10 minutes: Q and A

Take-Home Tools:

1. Session handout
2. Template of lesson plan
3. Guided learning questions

Accessible Experiential Learning in a Safe Virtual Environment

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Workshop Description: Explore how a virtual training hospital bridges the gap between theory and practice and how faculty support learners in honing decision-making skills and competencies without compromising classroom learning or hands-on clinical experience.

Discover how virtual simulation tools like CyberPatient's immersive experience empower learners, regardless of their unique learning styles. We'll explore the faculty's role in nurturing confidence and competence improving care quality while controlling costs.

Rationale: This workshop addresses the evolving landscape of medical education, where virtual environments and technology make learning more engaging and accessible. CyberPatient (CP) enhances safety and inclusivity in medical training, while technology-driven learning adds fun and interactivity, boosting motivation and knowledge retention. Let's equip educators to adapt, offering improved engagement, cost-effectiveness, safety, accessibility, and a more enjoyable learning process, ensuring students are ready for modern healthcare challenges.

Outcome Objectives:

1. **Enhanced Learning:** Discover how utilizing virtual environments and technology can breathe life into traditional textbooks, promoting deeper understanding and engagement.
2. **Experiential Learning:** Understand how CyberPatient (CP) plays a pivotal role in experiential learning, preparing learners for clinical teaching, remediation, and competency maintenance.
3. **Safety and Accessibility:** Learn how CP contributes to a safer and more accessible medical education environment, fostering inclusivity and minimizing barriers.
4. **Cost-Efficiency:** Explore how the integration of CP can reduce the overall cost of medical education while maintaining high-quality learning experiences.
5. **Engagement:** Experience how technology-driven learning can make medical education more enjoyable and interactive, enhancing learner motivation and retention.

Intended Participants: 1) Medical and nursing faculty members looking to add experiential learning and virtual simulation to their curriculum using technology that simulates a virtual hospital. 2) Medical and nursing students who are curious about how virtual simulation can help prepare them for clinical education and upcoming rotations by becoming familiar with the value of practicing communication and decision-making skills in history taking and physical examination, and further deductive reasoning during provisional and final diagnosis, medication and beyond.

Methods: Begin with an engaging introduction that highlights the significance of experiential learning and its benefits for both students and faculty. Explore the potential of CyberPatient as an e-learning tool, offering a glimpse into the virtual hospital experience. During the panel discussion, faculty and students will converge to delve into the concept of competency-based education in a virtual realm. They will openly exchange their workshop experiences, insights, and newfound knowledge. Furthermore, this collaborative session will serve as an opportunity to collectively evaluate the workshop's overall impact on clinical education, paving the way for continued advancements in teaching and learning within the healthcare field.

Activity Timeline:

1. 10 minutes - Introduction to Experiential learning and the value for students and faculty
2. Introduction to integrating CyberPatient as an e-learning tool (virtual hospital)
3. 60 minutes - Workshop learners will be divided into 2 groups; Faculty and students.
 - a. Faculty will gain access to CyberPatient and learn how to set up a classroom with defined learning objectives and expected outcomes, add students and assign clinical cases, and gain knowledge on providing optimal formative and summative assessment.

- b. Students will receive class information from faculty, complete assigned clinical cases, and respond to faculty assessments.
4. 20 Minutes - Both groups will reunite for a panel discussion about competency-based education in a virtual environment and assess the experience.

Take-Home Tools:

1. CyberPatient Access: Free 6-month access to the CyberPatient platform, providing a virtual hospital experience for continued learning and practice.
2. Curriculum Integration Guide: A comprehensive guide on seamlessly integrating virtual simulation into your curriculum, complete with tips for defining learning objectives and expected outcomes.
3. Formative and Summative Assessment Strategies: Insights into effective formative and summative assessment strategies to gauge student progress and learning outcomes.
4. Competency-Based Education Resources: Materials that explore the concept of competency-based education within a virtual environment, fostering a deeper understanding of this innovative approach.
5. Workshop Insights Compilation: A compilation of insights, experiences, and key takeaways from the panel discussion, providing a valuable resource for future reference.
6. Impact Assessment Worksheet: A tool for assessing the impact of virtual simulation on clinical education, helping you track progress and improvements over time.

**Bias and Disparities in AI-Generated Portrayals of Medical Students:
A DALL-E Algorithm Analysis**

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(2) *University of Maryland School of Medicine;*

Problem Statement: Our study investigates whether AI-generated images of medical students accurately represent the diversity of the current student population.

Rationale: Advancements in artificial intelligence (AI) have revolutionized the generation of realistic images from simple text prompts. These AI applications rely on extensive datasets of pre-existing images for training, a practice that could inadvertently propagate bias if the datasets fail to represent the diversity of the general population 1. There has been little previous research on bias in AI image generation although one study found that AI produced more images of young white females than of other groups 2. Bias in image recognition algorithms has also been documented, exemplified by Google's image recognition algorithm and images of people of color 3.

It's possible that these algorithms will be used to produce stock images for web content and marketing materials including within medicine and medical education. Understanding and mitigating biases in AI-generated images is essential to ensure that these technologies are employed fairly and inclusively across different sectors.

Methods: The study was exempt from IRB review as it did not involve human subjects. We generated 300 images of medical students by entering the text prompt, "medical student," into the DALL-E (Open AI, San Francisco, CA) image generation algorithm between the dates February 21, 2023 and March 13, 2023.

Two researchers independently analyzed each image for demographic indicators including: perceived sex (male, female, non-binary); perceived race/ethnicity (White, Black, Latino/Hispanic, Asian, Native American/Alaskan Native, and Native Hawaiian/Pacific Islander), perceived age group (20-25, 26-30, 31-35, 36-40, and 40+); setting (outdoors, hospital, classroom, or plain background); and attire (collared shirt, scrubs, or white coat).

We summarized the data with descriptive statistics and inter-observer variability between the two readers was calculated. To explore potential differences in how students were portrayed based on sex and race, we conducted subgroup analyses using two-way tabulations and chi-square tests to compare attire and setting across different racial and gender groups.

Finally, we graphically compared the proportion of gender and racial/ethnic groups represented in the virtual cohort with the gender and racial/ethnic groups reported in the AAMC medical school enrollment data. We set the significance level at a p-value of less than 0.05. All analyses were performed in Stata version 17 (Stata Corp, College Station, Texas).

Results: Of the 300 AI-generated images of medical students, 227 (76%) were females and 73 (24%) males. The most common racial group was White (223, 74%), followed by Asian (46, 15%), Black (19, 6%), and Latino/Hispanic (12, 4%). There were no images assessed to be representative of Native American/Alaskan Native or Native Hawaiian/Pacific Islander students. Most students fell into the age range of 26-30 years (226, 75%), with 42 (14%) ages 20-25, 28 (9%) ages 31-35, 4 (1%) ages 36-40 and 0 ages 41+. In terms of setting, most students were depicted in a plain background 163 (54%), followed by classroom 57 (19%), hospital 51 (17%), and outdoors 29 (10%). Scrubs were the most common attire 184 (61%), followed by white coats (105, 35%) and collared shirts (11, 4%).

Black and Latino/Hispanic students were more commonly portrayed in scrubs (84% and 83% respectively) compared to White students (61%, $p=0.002$) who were frequently portrayed in white coats or collared shirts (39%), Figure 1. Outfit and setting did not vary significantly by student sex. White students (74%) and females (76%) were over-represented in the AI images compared to the actual demographics of medical school matriculants (53% and 54% respectively), Figures 2 and 3.

The inter-rater agreement analysis was as follows: sex: kappa= 0.96, excellent agreement; age: kappa=0.28, fair agreement; race/ethnicity: kappa=0.83, excellent agreement; outfit: kappa=1.0, perfect agreement; setting: kappa=0.69, substantial agreement.

Potential Impact: Our study reveals significant disparities in the representation of demographic groups in AI-generated images of medical students, indicating potential bias in these technologies. These biased portrayals could perpetuate existing stereotypes and hinder diversity efforts.

References:

- 1) Hartsfield T. How do DALL-E, Midjourney, Stable Diffusion, and other forms of generative AI work? Big Think, available at: <https://bigthink.com/thefuture/dall-e-midjourney-stable-diffusionmodels-generative-ai/>(accessed 8 October 2022). 2022
- 2) Salminen J, Jung S-g, Chowdhury S, Jansen BJ. Analyzing demographic bias in artificially generated facial pictures. 2020:1-8.
- 3) Barr A. Google mistakenly tags black people as 'gorillas,' showing limits of algorithms. The Wall Street Journal. 2015;1(7):2015.

Utilization Patterns and Perceptions of a Spaced Repetition Flashcard Program among Medical Students

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Problem Statement: The Anki flashcard program is popular with medical students; perceptions and usage patterns should be explored for potential curricular integration.

Rationale: Medical education is notorious for its immense challenges, demands, and ever-growing body of knowledge leading to significantly higher stress levels among medical students than the general population [1]. Given the need to process vast amounts of information within short timeframes, medical students often turn to external resources to optimize their learning efficiency. One such popular resource is Anki, a free, open-source flashcard program that leverages spaced repetition to enhance learning and retention.

Studies have shown that spaced education enhances clinical knowledge retention in medical education [2,3]; however, few have specifically focused both on perceptions and usage patterns of Anki. Considering that academic and extracurricular pressure often leads to medical student burnout, it is crucial to explore how medical students perceive and use this study tool in order to support future curricular integration (and subsequently alleviate medical student burnout).

Methods: First-year medical students at the University of Central Florida College of Medicine were recruited to participate in a 10-minute online survey that was open for two months.

Deidentified demographic data including age, sex, academic path, and undergraduate majors in addition to pertinent survey questions were gathered. The survey was open to both Anki and non-Anki users and formatted using a Likert scale mostly. For Anki users, the survey examined their Anki usage structure, perceptions of Anki, and Anki in relation to burnout and wellness. For non-Anki users the survey examined if they had ever used Anki and, if they had, why they did not continue with their usage. Survey questions were created based on prior Anki experience and adapted from various topics on validated burnout surveys. Eighty-nine of 120 students in the first-year class (74% response rate) completed the survey. Quantitative analysis was performed using descriptive statistics and correlation tests on SPSS.

Results: The significant findings include: 94% (84/89) of students identified as Anki users, emphasizing its role in medical education; most users relied on pre-made cards (97.6%) and considered Anki as a key study strategy (62.6%); 52.5% of students have skipped out on exercising due to Anki; most students preferred fill in the blank cards (78%); a majority (56.6%) reported multitasking with Anki during activities like exercising or eating; 59% believed Anki boosted productivity compared to other study tools; a slight majority (51.8%) had used Anki prior to medical school; and a substantial majority (87.8%) believe that Anki significantly contributes to their success in modules.

In addition, Pearson correlation tests revealed the following: as the number of average daily cards increased, perceived burnout decreased ($r = -.269^{**}$); and the higher the percent study strategy of Anki, the stronger the perception of success ($r = .621^{**}$). Furthermore, paired sample t-tests were performed to compare confidence and anxiety levels before and after card completion. There was a significant difference in confidence level before ($M = 2.72$, $SD = .61$) and after ($M = 1.88$, $SD = .68$) card completion; $t(82) = 9.75$, $p = >.001$. There was also a significant difference in anxiety level between before ($M = 1.76$, $SD = .73$) and after ($M = 2.42$, $SD = .75$) card completion; $t(82) = -8.58$, $p = >.001$. Overall, in reference to exams, confidence levels increased while anxiety levels decreased after card completion.

Potential Impact: Most medical students use Anki as part of their study strategy. Faculty may be able to utilize these insights to optimize the implementation of Anki in medical education and ensure its

alignment with students' preferences. Future research should gather qualitative data for a comprehensive understanding of Anki's role in medical education.

References:

- 1) Dyrbye LN, Thomas MR, Shanafelt TD. Medical Student Distress: Causes, Consequences, and Proposed Solutions. *Mayo Clinic Proceedings* 2005;80(12):1613-22 doi: 10.4065/80.12.1613.
- 2) Kerfoot BP, DeWolf WC, Masser BA, Church PA, Federman DD. Spaced education improves the retention of clinical knowledge by medical students: a randomised controlled trial. *Medical Education* 2007;41(1):23-31 doi: <https://doi.org/10.1111/j.1365-2929.2006.02644.x>.
- 3) Deng F, Gluckstein JA, Larsen DP. Student-directed retrieval practice is a predictor of medical licensing examination performance. *Perspectives on Medical Education* 2015 doi: 10.1007/S40037-015-0220-X.

Mediating the Impact of Medical Student Introversion on Happiness

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Problem Statement: Personality traits such as introversion are stable over years, and introverts need psychological means to correct for problems impacting happiness.

Rationale: Being an introvert is challenging in a modern society which personally and professionally rewards extroverted behavior.¹ Extroversion is a critical factor of personality and is directly linked to many positive psychological constructs such as happiness and emotional intelligence.² Consequently, introversion is associated with decreased happiness and satisfaction, and the capacity to be aware of, control, and express one's emotions. Previously reported studies and their analytical evidence can reinforce the perception that introverts struggle more to have positive psychological outcomes.³

The purpose of this study is to analyze the predictive relationship of medical student introversion on happiness (outcome) with trait affect (mediator) and gender (moderator).

Methods: In 2017/18, 205 of 500 M-1/M-2 medical students (106 males/99 females) voluntarily completed these self-reported surveys: (A) 50-item Five Factor Personality Inventory (scale:1=very uncertain, 5=very certain), (B) 18-item Orientation to Happiness and Life Satisfaction Survey (1=strongly disagree, 7=strongly agree), and (C) 60-Item Positive and Negative Affect Schedule (PANAS-X, 1=very slightly or not at all, 5=extremely) for trait-affect. Pearson correlations (r) and stepwise multivariate linear regressions used for predicting happiness scores from extroversion and trait-affect. Single-sample t -tests determined significant differences in mean scores from the instrument's midline score. Differences in mean scores split by gender generated with independent t -tests and Cohen's d effect sizes. Inter-item reliability was determined by Cronbach alpha. IBM® SPSS® 28.0 generated statistical analysis. This research was approved by the institution's IRB.

Results: Reliable ($\alpha=0.83$) happiness scores (mean (sd) = 88.2 (12.8)) were significantly ($p>0.001$) above the midline score (72) with a range of 37-123. Eleven percent of happiness scores were below the midline.

Statistically significant Pearson correlations were reported between extroversion and happiness ($r=0.4$, $p>0.001$). Significant correlations were generated with extroversion and trait affect elements of self-assurance ($r=0.4$, $p>0.001$) and joviality ($r=0.4$, $p>0.001$). Significant correlations were generated with happiness and trait affect elements of self-assurance ($r=0.5$, $p>0.001$) and joviality ($r=0.5$, $p>0.001$).

Female students: The linear regression of happiness on extroversion was significant ($\beta=0.3$, $R^2=.20$, $p>.001$). When the trait affect self-assurance was entered in the regression model ($\beta=0.5$), extroversion was mediated as it was no longer significant ($\beta=0.0$).

Male students: The regression of happiness on extroversion was significant ($\beta=0.5$, $R^2=.21$, $p>.001$). When the trait affect joviality was entered in the regression model ($\beta=0.6$), extroversion was mediated as it was no longer significant.

Potential Impact: Medical students used emotions to mediate the impact of introversion on happiness. For female students, self-assurance was the trait-affect mediator, and confidence in their abilities would correct for the impact of introversion on happiness. For male students, joviality was the mediator, and cheerfulness and humor would offset introversion.

References:

- 1) Spark A, O'Connor PJ, State Extraversion and Emergent Leadership: Do Introverts Emerge as Leaders When They Act like Extraverts? *The Leadership Quarterly*, 2021;32(3):101474.

- 2) Cuartero N, Tur AM. Emotional Intelligence, Resilience and Personality Traits Neuroticism and Extraversion: Predictive Capacity in Perceived Academic Efficacy. *Nurse Education Today*. 2021 Jul;102:104933. doi: 10.1016/j.nedt.2021.104933. Epub 2021 Apr 26.
- 3) Sobol M, Przepiórka A, Meisner M, Kuppens P. Destiny or Control of One's Future? Fatalistic Time Perspective and Self-esteem in Extraverts and Introverts, *The Journal of General Psychology*. 2021 Feb 8:1-13. doi: 10.1080/00221309.2021.1878486.

Toward Empathic Listening & Solidarity: A Study of Long COVID Narratives in Community Health

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Problem Statement: We aim to raise awareness on Long COVID patient experiences through linguistic narrative analysis, including interactions with healthcare providers.

Rationale: While the government and medical community continue to grapple with Long Covid, we seek to center the voices of actual Long Covid patients through the linguistic analysis of 100 narratives in an effort to better understand the lived experience of Long Covid patients. We believe that better understanding the Long Covid experience could lead to better understanding around its symptoms and comprehensive treatment options. This analysis also highlights the negative compounding impact on patients working with medical professionals who do not fully understand what Long Covid is, much less how to treat it. This analysis is made without judgment regarding the responses of medical professionals who may have not had the opportunity to adequately study Long Covid pathology, and who also have high demands on their time, particularly in this post-pandemic era. Rather, this analysis is offered as a consideration to encourage a better way forward for all of us.

Methods: This pilot study draws on narrative analysis framework in order to better understand the nuances of Long Covid experiences across multiple contexts (Lowenstein, 2022). We developed a framework that centered empathy (hearability) and solidarity building in non-clinical settings. Oral history frameworks also helped us in narrative elicitation and analysis (Brier, 2018). Our framework integrated sociolinguistic, narrative medicine, and oral history approaches to examine long COVID narratives collected from a wide variety of contexts. We examined the narratives along a continuum of performative (Type 1) and emergent narratives (Type 2) (Razfar & Rumenapp, 2014). Our analysis examined linguistic markers of the long COVID narratives in terms of tellership, tellability, embeddedness, moral stance, and linearity. For the purpose of this analysis, we developed a rubric and added the dimensions that foregrounded empathy (hearability) and degrees of solidarity (from parasitic to transformative). All narratives were rated twice to ensure inter-rater reliability, and the resulting data offers insights into the Long Covid patient experience, as well as opportunities to improve treatment and patient-doctor rapport in Long Covid settings.

Results: This mixed-methods study includes quantitative ratings assigned to linguistic Long Covid narratives from a variety of sources. Data sources include a combination of high-profile book and media quotes, lesser-known social media quotes, and student conductive interview transcripts. The overall average ratings for each area of analysis is as follows: Tellership = 1.21, Tellability = 2.23, Embeddedness = 2.82, Moral Stance = 2.63, Linearity = 2.93, Hearability = 1.79, Solidarity = 1.55, Elicitation = 1.99 with varying degrees of standard deviation. Examples of high hearability and high solidarity were rare, and nearly non-existent in narratives including Long Covid patient and healthcare provider interactions. The data is disaggregated across the following subgroups that surfaced across the 100 narratives used for analysis: BIPOC, children, LGBTQ+, Fat (term used in accordance with the National Association to Advance Fat Acceptance), and incarcerated. Narratives were not assigned to a subgroup unless the context made that subgroup clear. Initial findings suggest the lowest levels of hearability and solidarity exist amongst people who are incarcerated. The linguistic analysis of our narratives suggest a need to increase Long Covid awareness and education, particularly amongst healthcare professionals, in order to ensure effective comprehensive treatment that affirms patient concerns and needs. Presentation will include the research-based rubric developed to conduct this study.

Potential Impact: Results highlight the opportunity and need to support medical professionals with training to better understand Long Covid pathology and symptoms, as well as to engage in supportive bedside manner with Long Covid patients. We offer suggestions based on examples of efforts to improve care for once poorly understood conditions such as HIV/AIDS.

References:

- 1) Brier, J. (2018). "I'm Still Surviving": Oral Histories of Women Living with HIV/AIDS in Chicago, *The Oral History Review*, 45(1), 68-83.
- 2) Lowenstein, F. (2022). *The Long COVID Survival Guide: How to Take Care of Yourself and What Comes Next—Stories and Advice from Twenty Long-Haulers and Experts*. The Experiment, NY, NY.
- 3) Razfar, A. & Rumenapp, J.C. (2013) *Applying Linguistics in the Classroom: A Sociocultural Perspective*

Building Health Systems Science Skills Through Experiential Rotations and Classroom-Based Selectives

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Problem Statement: There is a need to develop real-world, experiential courses in health systems science (HSS) to bridge the gap between HSS theory and practice.

Rationale: HSS is a discipline that seeks to train students to contextualize the basic and clinical sciences within larger health and social systems and address growing demands to teach relevant topics that impact patient and community health. Despite increasing numbers of schools teaching HSS concepts, significant barriers remain, including a gap in outcomes between undergraduate and graduate medical education. A recent study found that early adopters of HSS reported no differences in milestone ratings for HSS-related ACGME systems-based practice competencies compared to schools without formalized HSS training, indicating a need to give students opportunities to apply theoretical knowledge and develop skills in real-world settings (Santen et al. 2021). We piloted a set of HSS selectives that embed students within organizations and provide deep dives on specific content areas to better translate general HSS knowledge into practical engagement.

Methods: We piloted a set of HSS selectives for 47 third-year medical students during AY 2022-2023 that included 8 experiential placements and 4 in-depth classroom-based courses that span five core HSS domains: Quality and Patient Safety, Inquiry, Community and Population Health, Health Care and Social Systems, and Health Information Technology. Each selective spanned 4 weeks and allowed students to gain in-depth experience and learning in a variety of HSS topic areas. The 12 HSS selectives were developed using a core set of five educational program outcomes (EPOs) that were identified as foundational to HSS, including Uncertainty, Systems Thinking and Design, Leadership Change, Critical Consciousness, and Social Accountability (Table 1). Students at experiential placements were hosted by healthcare and community organizations, where they were embedded within non-clinical teams. Assessment of experiential placements were largely project-based, with projects identified by host sites and preceptors. Classroom-based courses allowed students to explore in-depth HSS topics with expert faculty through small group, team-based instructional methods. Assessment methods for classroom-based courses included use of observed structured clinical exams (OSCE) to assess students' ability to assess and navigate patients' social needs during a clinical encounter, editorials and essays, as well as both individual and group presentations. Student and faculty feedback were collected for each selective.

Results: Evaluation of courses at mid-year indicated that these HSS selectives were highly rated by both students and course faculty. Classroom-based courses were rated highly, with students reporting that the course supported their learning (mean rating 4.6/6), feedback from assessments supported their learning (5.17/6), assessments were appropriate for course content (5.05/6), and teaching in the course supported their learning (5.19/6). Experiential placements were also rated highly, with 82% of students moderately or strongly agreeing that they made a valuable contribution to their placement organization and 100% of students moderately or strongly agreeing that the project they undertook supported their learning. 100% of placement preceptors who completed an end-of-course survey reported that student projects made a valuable contribution to their organization. As part of their selective experiences, students explored their specific interests and passions through projects and course deliverables. One student's project examined the complexities of applying for social security disability income and the impact on patients suffering from long COVID, which was published in a peer-reviewed journal. Other examples of projects included policy solutions for national physician shortages, specific clinic improvements to better address patients' social needs, and an opinion-editorial on the significant lack of quality metrics for common behavioral health disorders.

Potential Impact: HSS selectives allow students to apply knowledge into practical, real-world experiences, which may translate to more robust learning and knowledge acquisition in the long-term. We want to continue to develop this program with an eye toward sustainability and replicability, as well as robust evaluation of educational program outcomes.

References:

- 1) Santen, S. A., Hamstra, S. J., Yamazaki, K., Gonzalo, J., Lomis, K., Allen, B., ... & Skochelak, S. (2021). Assessing the transition of training in health systems science from undergraduate to graduate medical education. *Journal of graduate medical education*, 13(3), 404-410.

A Supportive Feeding and Respiratory Medical Equipment Curriculum for Medical Students

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Problem Statement: Education for medical students on feeding and respiratory medical equipment is lacking despite an increasing number of patients reliant on them.

Rationale: The improved care of children with chronic conditions has led to the increased usage and prevalence of medical equipment, in particular supportive feeding and advanced respiratory devices. Medical equipment use has also risen in the elderly population and in critically ill patients⁵. Despite the increase across the patient spectrum, a corresponding increase in education on the topic at the medical student level is lacking. An informal local needs assessment among medical school stakeholders found lack of a structured curriculum as well as a knowledge gap and an interest in the topic among third year medical students. This educational project aims to evaluate the efficacy of a medical equipment curriculum on changing learner attitude and knowledge related to the indications, risks, and benefits of specific medical equipment after completing the curriculum during their 3rd year pediatric clerkship experience.

Methods: A 3-session curriculum on supportive feeding and respiratory equipment for hospitalized children was developed using Kern's 6-step methodology. The curriculum will be administered as routine education during the students' 3rd year pediatric clerkship experience. Each educational session will emphasize a different source of knowledge, with expert teaching during a classroom didactic session, peer teaching during case-based small group discussion, and direct teaching from the family and patient during bedside learning. The latter two educational sessions encourage active discussion and hands-on learning of medical equipment. Pre and post curricular surveys will assess changes corresponding to the appropriate Dreyfus learner level and to attitude and knowledge on the Kirkpatrick Model of Evaluation: learner attitude via 9 questions each with a 5-point Likert scale, with higher scores indicative of greater perceived importance (max 45 points), and knowledge level via a 10-question test (max 10 points). A two-sided, 5%-significance paired t-test will be utilized to test the mean change in both outcomes. Additional feedback on the curriculum will be elicited to promote future improvement.

Results: To date, 40 out of 52 students (77%) who are acting as their own controls have completed their pediatric clerkship rotation (total n = 160) and both the pre and post curricular surveys. Preliminary results of the study indicate that learner attitude increased from the pre (mean = 21.2) to the post curricular evaluation (mean = 30.9) by 9.7 points (95% CI 7.8, 11.6; p = >0.001). Learner knowledge level increased from the pre (mean = 5.62) to the post curricular evaluation (mean = 6.47) by 0.85 points (95% CI 0.2, 1.46; p = 0.009). The active learning methods, specifically the case-based small group discussion and the direct bedside learning, were more highly rated by the students. At the end of the curriculum 92.5% of learners and 97.5% of learners agreed or strongly agreed that the content was appropriate for their level of training and is or will be relevant to their future clinical practice, respectively.

Potential Impact: A curriculum on medical equipment was well received by medical students. Future iterations should reinforce active learning and, especially at the higher training levels, incorporate high fidelity methods such as live feedback and simulations.

References:

- 1) Folwarski M, Klek S, Brzezinski M, Szlagatys-Sidorkiewicz A, Wyszomirski A, Meyer-Szary J and Skonieczna-Zydecka K (2022). Prevalence and Trends in Percutaneous Endoscopic Gastrostomy Placement: Results From a 10-Year, Nationwide Analysis. *Front. Nutr.* 9:906409. doi: 10.3389/fnut.2022.906409
- 2) Leyenaar JK, Freyleue SD, Arakelyan M, Goodman DC, O'Malley AJ. Pediatric Hospitalizations at Rural and Urban Teaching and Nonteaching Hospitals in the US, 2009-2019. *JAMA Netw Open.* 2023

Sep 5;6(9):e2331807. doi: 10.1001/jamanetworkopen.2023.31807. PMID: 37656457; PMCID: PMC10474556.

- 3) Muesing C, Schimelpfenig B, Hustvet D, Maynard R, Christensen EW. Longitudinal Prevalence of Tracheostomized Children in Minnesota. *Hosp Pediatr*. 2020 Aug;10(8):663-669. doi: 10.1542/hpeds.2020-0038. PMID: 32718915.

Am I Prepared? Integration of Disabilities Education in the Medical School Curriculum

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Problem Statement: Most medical schools do not offer education or formal training on caring for patients with disabilities (PWD).

Rationale: According to the CDC, 26% of the US population lives with a disability. Because of this, the US Institute of Medicine, the Surgeon General of the United States, the Association of American Medical Colleges (AAMC) and several other policymaking institutions have identified the need for disability-based education. Studies show that many students and physicians feel inadequately prepared to care for PWD, thus contributing to the healthcare disparities that exist for this population. Furthermore, medical students may often harbor negative stereotypes or make incorrect assumptions about PWD affecting the quality of care. Our aim is to promote the inclusion of disability education in medical school curricula and identify creative strategies to incorporate PWD into preclinical sessions.

Methods: As a result of a student-led advocacy initiative in 2018, the Florida International University Herbert Wertheim College of Medicine implemented a session into the curriculum titled Disability Awareness Education in an Active Learning Environment. Each year all first year medical students enrolled in the Clinical Skills course, attend a 2.5-hour session that consists of a brief didactic followed by interactive small group discussions involving people living with paralysis who utilize wheelchairs. In the first hour of the session, the entire cohort of 130 students is in a large group setting. The large group is facilitated by an experienced physician faculty member who also has lived experience with physical disability. Several members of the community are recruited to be involved in this session. Storytelling is used in short segments throughout as an effective tool to highlight key concepts and engage the learners. Following the large group, the students then break out into 90-minute small groups. The small group sessions are facilitated by faculty and individuals with physical disabilities who participate in an hour long briefing and development session. The students are given the opportunity to practice the patient-centered communication and interviewing skills taught and receive live feedback from PWD. Pre and post surveys assessed the student's knowledge, confidence, and satisfaction with the overall session.

Results: Four cohorts have participated in the session from 2018-2022. Canvas is the platform used to administer the pre and post surveys. Student participation in the surveys is completely voluntary and has no effect on their grade or evaluation in the course. Medical student confidence is assessed via 5-point Likert scale questions. The responses are de-identified by the Course Director prior to data collection and analysis by the team. Paired t-Tests revealed a statistically significant increase among all 6 survey questions. After the session, students reported feeling more confident and comfortable communicating and gathering a history from PWD. Students were highly satisfied with the engaging format of the session. Thematic analysis revealed the greatest impact for respondents was the opportunity to interact personally with PWD. Students also reported the importance of having a controlled space to ask questions, having their eyes opened to discrepancies in patient care for PWD, and a recognition of the importance of understanding patient perspective at large. The data showed similar results when delivered live vs. when the session was online and hybrid during the COVID pandemic. This suggests that regardless of the format, the session was impactful.

Potential Impact: Our findings suggest that direct exposure to patients with disabilities in the preclinical curriculum can effectively increase students' knowledge and self-confidence in caring for this population. Future directions of this project will explore the use of formative OSCEs including PWD to allow for objective assessment of skills attainment.

References:

- 1) Marzolf BA, Plegue MA, Okanlami O, Meyer D, Harper DM. Are Medical Students Adequately Trained to Care for Persons With Disabilities?. PRiMER. 2022;6:34. Published 2022 Aug 30. doi:10.22454/PRiMER.2022.878147
- 2) Keller MA. Doctors and Disability: Improving Inclusion in Medical Education. HCA Healthc J Med. 2022;3(3):179-187. Published 2022 Jun 28. doi:10.36518/2689-0216.1393
- 3) Smeltz L, Carpenter S, Benedetto L, et al. ADEPT-CARE: A pilot, student-led initiative to improve care for persons with disabilities via a novel teaching tool. Disabil Health J. 2023;16(3):101462. doi:10.1016/j.dhjo.2023.101462

Script Concordance Test: A Clinical Reasoning Evaluation Tool for Pre-clerkship Medical Students

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Problem Statement: Current medical school curriculums struggle to assess the development of clinical reasoning in pre-clinical years effectively

Rationale: Teaching clinical reasoning is difficult when students lack the knowledge to engage in complex clinical scenarios and are, instead, encouraged to memorize for traditional assessments. Additionally, the intricacies and unpredictability of real clinical encounters are challenging to simulate. Current attempts engage students in clinical experiences to develop clinical skills and clinical reasoning but lack tools for assessing said reasoning.

A script concordance test (SCT) is an assessment tool that evaluates clinical reasoning. SCTs present students with a brief clinical scenario and prompt to evaluate how much a new piece of information affects a specific differential diagnosis's likelihood.

The SCT is designed to evaluate clinical reasoning in uncertain situations. The brief clinical scenarios emulate real-world ambiguity of an incomplete picture and focus evaluation on individual decisions made throughout patient management.

Methods: Two rounds of data collection were conducted at CUSM to validate SCT as a method to evaluate clinical reasoning. The first round in 2022 included both year-1 and year-2 medical students. The SCT was developed by faculty with finalization by other faculty taking the exam, per SCT guidelines (Fournier et al., 2008). The SCT was administered in a 1-hour, in-person session, including 30 questions split into 10 scenarios reflecting the recent curriculum. Year-1 students completed the exam on cardiology, pulmonology, and gastroenterology topics using Oasis software. Year-2 students completed a neurology-based SCT. The SCT was first taken individually (iSCT) for 30 minutes, then taken again in small teams (tSCT) for 20 minutes. Surveys were completed on a 5-point Likert scale. Only the year-1 students completed a focus group.

The second round in 2023 included only year-1 students and reflected changes based on the results of the first implementation. The SCT was developed by year-2 students and finalized by faculty. The SCT was shortened to 18 questions split into 9 scenarios and the answers were simplified into a 3-point Likert scale. The exam topic was based on CUSM's Foundations curriculum. Both individual and team portions were administered in the same structure as the previous implementation, except the iSCT lasted 20 minutes and faculty contributed to the tSCT discussion. Surveys were completed on a 5-point Likert scale and open answers, and a focus group was conducted.

Results: In the first round, ten year-1 and twenty-three year-2 students took the exams. The majority of year-1 and year-2 students agreed that it was intuitive, relevant, reflected their current curriculum, and should be incorporated into pre-clerkship curriculum via survey. The focus group revealed challenges that included difficulty with the Oasis user interface, a desire for an answer explanation key, and that the 5-point Likert answering scale was too difficult for year-1 students. Positive feedback revealed enjoyment for the question type, that the team component was beneficial, and that the test required critical thinking not provided by the school curriculum.

In the second round, the majority of nineteen year-1 students agreed that it improved clinical reasoning, that students in the next medical class would benefit from this test, and that SCT-style questions better assessed the complexity of clinical reasoning than traditional STEP 1-style questions. The focus groups

revealed areas of improvement such as clarifying wording in questions, recommendations to provide greater incentives to attend with food, and more time for the group component. Positive feedback compared similarly to the first round, including enjoyment of the exam style, that the SCT was a helpful review of previously tested material, that having faculty facilitate group discussion was helpful, and that adding this question type into clinically-focused components of pre-clinical curriculum would be beneficial.

Potential Impact: Student and faculty feedback indicated that SCT-style tests fill a desired gap in pre-clinical medical school assessment of clinical reasoning. We anticipate gathering data on SCTs delivered for each block of curriculum to trend student clinical reasoning by subject and over the course of the year.

References:

- 1) Fournier et al, (2008). Script Concordance Tests: Guidelines for Construction. BMC Medical Informatics and Decision Making, 8(18)
- 2) Coderre, S. P. (2002). Scheme Utilization by Medical Students and Experts: From Theoretical to Clinical Advantages. National Library of Canada= Bibliothèque nationale du Canada, Ottawa.
- 3) Charlin, B., Roy, L., Brailovsky, C., Goulet, F., & van der Vleuten, C. (2000). The Script Concordance test: a tool to assess the reflective clinician. Teaching and learning in medicine, 12(4), 189-195.

Medical Student-Led Research Education Program for Underrepresented High School Students

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Problem Statement: There is a lack of research on medical student-led research education program for high school students from underrepresented backgrounds.

Rationale: Research shows that underrepresented students are less likely to pursue careers in healthcare or research (1). Numerous existing programs attempt to improve diversity across the education pipeline, though few have incorporated medical students in roles as program leaders, and near-peer mentors to help increase representation among younger underrepresented medical students. Research shows that near-peer mentorship helps give students a stronger sense of belonging within the scientific community (1). We report on the outcomes of a medical student-led summer research education program geared towards exposing underrepresented high school students to careers in healthcare and research.

Methods: From June to August 2023, 10 rising second-year medical students from the University of California School of Medicine directed an 8-week summer program for local San Diego high school students from underrepresented backgrounds. During the summer, high school students spent 3 ½ days per week working in faculty-mentored labs, and 1 ½ days per week participating in an engaging summer curriculum overseen by medical students. The lab experience included participation in either a cancer-research lab or a regenerative medicine research lab. The medical student supported curriculum included didactic lessons on fundamental research skills as well as professional and career oriented instruction. Students participated in a health skills session, which involved medical students teaching high school students how to check vital signs, perform basic ultrasound skills, and conduct physician examinations. Other sessions included CPR training and career and college preparatory panels. A survey was administered at the end of the 8-week internship to assess student understanding of the college application process, stem identity (STEM-PIO-1), sense of belonging, and impact of medical student interaction on their stem identity and enjoyment of the program (2, 3). The high school students were also asked to rate the activities in the program based on the perceived effect on their STEM identity and how much they enjoyed the activities.

Results: The cohort of this study consisted of 20 incoming junior and senior high school students. Seven students identified as men (35%) and 13 as women (65%). Fourteen students were Asian or Pacific Islander (70%), 2 students were African American (10%), and 4 students were Hispanic (20%). Five students (25%) reported being prospective first-generation college students. High school students ranked the health skills session as having the greatest impact on STEM identity (8.8 out of 10), followed by the suturing lab (8.65), CPR training (8.55), educational lessons on cancer from medical students (7.95), medical student panel (7.8), career and college preparation presentation (7.3), research lab experience (7.15), medical improvisation session (7.1), letter writing (5.95), and research ethics training (5.5). High school students felt that engaging with medical students influenced their sense of identity within the STEM field (4.5 on a 5-point scale).

Potential Impact: This project highlights the capacity for medical students to lead research education programs for high school students from underrepresented backgrounds. Future research should evaluate the long-term impact of this program on high school students and the reciprocal benefits on medical student leaders.

References:

- 1) Aish N, Asare P, Miskioglu EE. People like me: increasing likelihood of success for underrepresented minorities in STEM by providing realistic and relatable role models. 2017 IEEE Frontiers in Education Conference (FIE). Published online 2017. doi:10.1109/fie.2017.8190454
- 2) McDonald MM, Zeigler-Hill V, Vrabel JK, Escobar M. A single-item measure for assessing stem identity. *Frontiers in Education*. 2019;4. doi:10.3389/feduc.2019.00078
- 3) Singer A, Montgomery G, Schmoll S. How to foster the formation of STEM Identity: Studying diversity in an authentic learning environment. *International Journal of STEM Education*. 2020;7(1). doi:10.1186/s40594-020-00254-z

The Push for POCUS: Are Internal Medicine Residents Interested in Ultrasound Training?

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Problem Statement: Is there an interest in and what are barriers to using point of care ultrasound among internal medicine residents within a large residency program?

Rationale: Point of care ultrasound (POCUS) is the use of ultrasound by a provider to aid in patient evaluation and management. While now commonly used in emergency medicine and surgical specialties, POCUS has not been readily adopted among Internal Medicine (IM) physicians as a tool to aid in diagnosis and bedside procedures. The purpose of this project was to survey IM residents at a large academic institution to gauge interest in learning POCUS and understand barriers to using ultrasound for medical care.

Methods: Surveys were emailed to 108 PGY 1-3 IM resident physicians at the Midtown Detroit Medical Center program. The Google Forms survey consisted of 13 questions with multiple choice, checkbox grid, Likert type, and matrix grid questions asking residents how they feel about POCUS, their own ability, and limitations/barriers to achieving proficiency using POCUS. Summary of responses was viewed to determine trends with both quantitative and qualitative data collected.

Results: 64 out of 108 residents responded to the survey (59% response rate). 98% of respondents stated that POCUS contributes to faster and better diagnoses within IM. 80% of residents responded very true/somewhat true to "POCUS is useful for me personally in acute patient care." However, 49% responded "less/very uncomfortable" with ultrasound for day-to-day diagnostic purposes while only 3.1% responded "very comfortable". When asked about limitations and barriers to learning or using POCUS, the most common barrier was insufficient practice time (72%) and insufficient training available (70%). 86% of residents reported anticipating using POCUS in their career and 70% reported that they were not satisfied with current formal education in POCUS training.

Potential Impact: IM residents are interested in POCUS training for diagnostic and procedural uses but do not feel comfortable using it due to insufficient practice/training. Ways to address these barriers include incorporating more POCUS within didactic sessions, workshops in collaboration with other specialties, and a POCUS track for interested residents.

References:

- 1) Ramgobin, D., Gupta, V., Mittal, R., Su, L., Patel, M. A., Shaheen, N., Gupta, S., & Jain, R. (2022). POCUS in Internal Medicine Curriculum: Quest for the Holy-Grail of Modern Medicine. *Journal of community hospital internal medicine perspectives*, 12(5), 36–42. <https://doi.org/10.55729/2000-9666.1112>

Exploring Learners' Experiences with Professionalism Feedback Using a Feedback Literacy Framework

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Problem Statement: Professionalism is a competency that requires feedback, yet the contextual and multifaceted nature of professionalism makes feedback challenging.

Rationale: As a core competency of medical education, professionalism requires feedback for learners to develop their skills. However, existing literature demonstrates that the professionalism feedback learners receive is infrequent, vague, and rarely based on direct observation (1). Learners from minoritized backgrounds report that their professionalism is more heavily scrutinized and that feedback can lack an understanding of the sociocultural factors affecting learners' actions (2). Little is known about how learners evaluate professionalism feedback and decide whether or how to respond. Using a framework of feedback literacy, which describes how trainees make sense of feedback and use it to improve, we aimed to identify how diverse learners experience critical and reinforcing professionalism feedback and how they decide whether and how to incorporate this feedback.

Methods: From 2021 to 2022, we conducted hour-long semi-structured interviews with fourth-year medical students and senior residents from UCSF, Mayo Clinic, and Morehouse Schools of Medicine about their experiences receiving professionalism feedback. Interviews were recorded, transcribed, and organized into three broad groups: trainees who identified as underrepresented in medicine (UIM), as non-white and non-UIM, or as white. Four researchers analyzed the transcripts using reflexive thematic analysis to develop codes (3). During the initial theme development phase, we identified Carless and Boud's feedback literacy framework as relevant to our data and used the four features supporting learner feedback literacy to cluster codes and generate themes. These features include: 1) appreciating feedback processes and recognizing the value of feedback, 2) making judgements regarding work quality, 3) managing affect and emotions during feedback process, 4) taking action, which requires the means and opportunity to act upon feedback (4). We compared themes across groups (UIM, non-white/non-UIM, white) to identify differences in professionalism feedback literacy. The researchers engaged in positionality and reflexivity by reflecting and discussing during group meetings about how their identities and background with professionalism might affect experiences interpreting the data.

Results: Of 49 learners interviewed, 17 identified as UIM, 15 as non-white/non-UIM, and 17 as white. From participants' accounts of their experiences with professionalism feedback, we identified four themes describing learners' professionalism feedback literacy that also demonstrate challenges inherent in professionalism feedback: 1) Appreciating feedback processes: Learners tended to view professionalism feedback as something to avoid because it was perceived as punitive. Even when feedback was positive, learners characterized it as generic and superfluous, viewing professionalism as a minimum standard. 2) Making judgements: In addition to making judgements about the quality of their own professionalism, learners also made judgements about the quality of feedback. 3) Managing affect: Maintaining an emotional equilibrium was challenging, and the personal qualities implied by professionalism led to critical feedback imparting a lasting emotional toll on learners, particularly UIM learners. 4.) Taking action: Learners often lacked the chance to discuss professionalism feedback with the feedback giver, which deprived learners of the means to act upon the feedback. However, learners still made changes in response to critical feedback, often becoming more hesitant in their interactions. Learners sometimes rejected critical feedback, but only after prolonged self-examination and consultation with trusted mentors.

Potential Impact: Engaging in useful professionalism feedback dialogues can be challenging due to brief relationships between feedback givers and learners that limit feedback usefulness for learning.

Faculty can use these findings to improve curriculum and communication regarding professionalism feedback to support learners navigating their professionalism journey.

References:

- 1) Cho CS, Delgado EM, Barg FK, Posner JC. Resident perspectives on professionalism lack common consensus. *Ann Emerg Med.* 2014;63(1):61-67.
- 2) Alexis DA, Kearney MD, Williams JC, Xu C, Higginbotham EJ, Aysola J. Assessment of Perceptions of Professionalism Among Faculty, Trainees, Staff, and Students in a Large University-Based Health System. *JAMA Netw Open.* 2020;3(11):e2021452.
- 3) Braun V, Clarke V. *Thematic analysis: A practical guide.* Thousand Oaks, CA: SAGE Publications; 2021
- 4) Carless D, Boud D. The development of student feedback literacy: Enabling uptake of feedback. *Assess Eval High Educ.* 2018;43(8):1315–1325.

Measuring results for practicing arthroscopic sports surgeons when taught via Augmented Reality

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Problem Statement: Augmented reality is emerging as a novel tool being utilized in medical education and there is a need to develop and study its efficacy.

Rationale: Augmented Reality (AR) may be a mainstay of future training and many argue that surgical training should mirror pilot training, leveraging the power of simulation before exposing trainees to live situations (2). Learning new surgical skills as an attending is difficult as there is no structured curriculum to advance one's skillset after residency. An international consensus by experts had a 93% agreement that the Arthroscopic Anatomic Glenoid Bone Block procedure be considered over the current gold standard treatment for anterior shoulder instability. Learning this technique is in demand and has been taught in-person by the developing surgeon until COVID19 pandemic, when AR was used to remotely teach this procedure. We developed an AR curriculum based on the principles of interactive, collaborative teaching with immediate feedback. Last year, we presented initial results. This year, we present further results of how the AR curriculum has been able to educate practicing surgeons.

Methods: A virtual surgical teaching curriculum utilizing Augmented Reality (AR) was developed and presented at the 2021 IME. Each teaching session was 4 hours in duration with the learner utilizing a cadaver lab at their home site. The learner received remote surgical guidance, pre-and post-care instruction from the instructing surgeon. The teaching session was conducted using zoom and incorporated a variety of teaching aids including 3D printed models and real-time augmented reality annotation on top of the learner's surgical view. The learners were directly observed using 3 cameras from different surgical perspectives. The instructor had the ability to manipulate, annotate and adjust the learners screen to manipulate the surgical view and facilitate targeted instruction with immediate feedback, while the learner was operating. Intraoperative measurements were obtained and imaged to assess successful completion of the AW surgical procedure. The session concluded with a thorough debriefing and review of a clinical case involving pertinent imaging, surgical technique and necessary post-operative care including pain management, physical therapy and clinical follow up. Quantitative data was collected during the surgical case to assess technical precision attained by the learner during this session.

Results: All learners were able to complete the novel AAGR procedure using Augmented Reality guidance with remote instruction. Primary outcome of correct anatomic reconstruction was accomplished in 98% of cases (bone graft was secured at the lower 1/3 of glenoid, parallel to face of glenoid, without damaging the subscapularis or conjoined tendons). All learners were able to verbalize the dimensions for graft preparation and verbalize anatomy of the far medial portal. The most common mistake identified in the learning curriculum was the ability to prepare the bone graft to the appropriate dimensions (50%). In addition, there was one critical mistake that was identified early and avoided (insertion of portal medial to the conjoin tendon). Feedback was unanimously positive with excellent reviews of use of augmented reality giving real time feedback and guidance for the learning of new surgical skills in practicing arthroscopic orthopaedic surgeons.

Potential Impact: With real-time feedback using augmented reality, learners were able to perform a novel surgical case, safely. This curriculum can serve as a platform from which AR can be developed and utilized in surgical education. Benefits may extend to teaching surgeons in rural location as well as other profession requiring kinesthetic skills.

References:

- 1) Hurley ET, Matache BA, Wong I, Itoi E, Strauss EJ, Delaney RA, Neyton L, Athwal GS, Pauzenberger L, Mullett H, Jazrawi LM; Anterior Shoulder Instability Delphi Consensus Group. Anterior Shoulder

- Instability Part II- Latarjet, Remplissage, and Glenoid Bone-Grafting-An International Consensus Statement. *Arthroscopy*. 2021 Jul 29:S0749-8063(21)00696-4. doi: 10.1016/j.arthro.2021.07.023. Epub ahead of print. PMID: 34332052,
- 2) McKnight RR, Pean CA, Buck JS, Hwang JS, Hsu JR, Pierrie SN. Virtual Reality and Augmented Reality- Translating Surgical Training into Surgical Technique. *Curr Rev Musculoskelet Med*. 2020 Dec;13(6):663-674. doi: 10.1007/s12178-020-09667-3. PMID: 32779019; PMCID: PMC7661680
 - 3) Gaunt BW, Shaffer MA, Sauers EL, Michener LA, McCluskey GM, Thigpen C; American Society of Shoulder and Elbow Therapists. The American Society of Shoulder and Elbow Therapists' consensus rehabilitation guideline for arthroscopic anterior capsulolabral repair of the shoulder. *J Orthop Sports Phys Ther*. 2010 Mar;40(3):155-68. doi: 10.2519/jospt.2010.3186. PMID: 20195022

Mentoring Circles and Identity Formation for Latinx Pre-Meds and Med Students

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Problem Statement: Promoting professional identity formation and sense of belonging of Latinx pre-medical trainees and medical students utilizing mentoring circles.

Rationale: Mentorship plays a pivotal role in the developmental journey of medical trainees, helping them adopt the mindset and skills of a physician. For underrepresented medical students (URM), having mentors who share their racial or ethnic background is particularly valuable. However, the presence of URM faculty members in medical schools remains disproportionately low. This minority tax burdens URM faculty to serve as mentors and can lead to faculty burnout. Innovative mentoring models are needed to address this issue. Mentoring circles, where a group of trainees are paired with a faculty mentor, show great promise. Group mentoring has been shown to reduce feelings of isolation, foster stronger connections, boost confidence, enhance knowledge, and demystify academic challenges. We implement mentoring circles, each with ten Latinx pre-med and medical students, all Latinx Medical Student Association members, and one Latinx faculty mentor.

Methods: Our mentoring circles unite ten Latinx pre-med and medical student mentees from across the country, guided by a dedicated Latinx faculty mentor. Over six monthly 90-minute Zoom sessions, participants exchange knowledge, fostering peer and near-peer mentoring bonds enriched by diverse training stages. We prioritize restorative justice practices, ensuring all voices are heard and respected. Participants can choose not to share if discomfort arises, creating an inclusive and secure environment that nurtures a profound sense of community. Evaluation includes 1) Accountability involves tracking attendance, session duration, and adherence to restorative justice principles. 2) For reaction, we collect feedback midway through group discussions aligned with Kilpatrick's level 1 reaction, guiding program refinement. We will also assess perceived usefulness through a post-survey. 3) Learning assessment includes pre- and post-program professional identity formation scales and belongingness scales. 4) Behavior entails participants formalizing commitments in the third mentoring circle, reporting progress in the final session, and identifying barriers. This comprehensive approach continually enhances our mentoring circles.

Results: We anticipate the following results. 1) Accountability: We predict that most mentees will actively attend the mentoring groups for the full duration, and they will likely welcome the restorative justice approach. 2) Reaction: We anticipate that mentees will have a positive impression of the mentoring circle, and their feedback will play a valuable role in refining the program or curriculum. We also expect that mentees will perceive the mentoring circles as beneficial for their professional development and sense of belonging, as assessed in a post-survey. We foresee that students will view group mentoring as an excellent complement to their one-on-one sessions with mentors at their institution. Anticipated benefits include reducing feelings of isolation, strengthening connections, enhancing professional identity, and fostering a sense of belonging. 3) Learning, measured through pre- and post-assessments using professional identity formation scales and belongingness scales, will likely demonstrate an increase in professional identity and a greater sense of belonging. The next steps will include a discussion around measuring the impact of mentoring circles on reducing minority tax for URM mentors.

Potential Impact: We must adopt mentoring circles to enhance URM trainees' professional identity and belonging in race-concordant mentoring and ease URM faculty's burden. This innovative approach may promote diversity in medical schools and ultimately improve patient care.

References:

- 1) Cruess RL, Cruess SR, Boudreau JD, Snell L, Steinert Y. A schematic representation of the professional identity formation and socialization of medical students and residents: a guide for medical educators. *Acad Med* 2015; 90: 718–25.
- 2) Penaloza, N. G., E. Zaila Ardines, K., Does, S., Washington, S. L., Tandel, M. D., Braddock, C. H., Downs, T. M., Saigal, C., & Ghanney Simons, E. C. (2023). Someone Like Me: An Examination of the Importance of Race-Concordant Mentorship in Urology. *Urology*, 171, 41-48. <https://doi.org/10.1016/j.urology.2022.08.059>
- 3) Ann Darwin & Edward Palmer (2009) Mentoring circles in higher education, *Higher Education Research & Development*, 28:2, 125-136, DOI: 10.1080/07294360902725017

Approaching Professional Identity Formation Curriculum with a Trauma-Informed Educational Framework

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Problem Statement: Professional identity formation (PIF) curriculum in medical school carries the risk of introducing new or old trauma in students.

Rationale: PIF in undergraduate medical education is a critical process through which students develop and refine an understanding of their roles within medicine. Each student undergoes an individualized journey of transformation into a medical professional, in part guided by reflections on how their clinical experiences and goals intersect with their personal backgrounds and values. Introspection and exploration of one's identity may elicit discussions on topics of sensitive and traumatizing nature (1). Educators at Harvard Medical School applied the six principles of trauma-informed clinical care into an educational context to propose a framework that institutions can use to minimize traumatization in medical school curricula (2). To create a trauma-informed environment for students engaging with PIF, we used these principles to inform two changes that we implemented to the delivery of PIF curriculum at our institution.

Methods: PIF at the UCSF School of Medicine is a longitudinal curriculum comprised of eight large-group panels and small group discussions spread throughout four years of medical school. Each panel addresses a theme related to professional identity, and students write and share critical reflections with their peers in a faculty-led small group discussion. Two changes were made to the PIF small groups to promote student voice and choice. 1) We widened the range of reflection prompts to include intrapersonal, interpersonal, and structural levels of engagement, and students can respond to one. 2) We provided an option for students to share their reflections with their groups rather than having this activity be mandatory. These changes were communicated in the faculty and student guide for the small groups.

Two anonymous, optional online surveys were administered to gather feedback on these changes. Survey 1 was sent to the second-year class in summer 2022 prior to the implementation and asked them to share their thoughts on the proposed changes in a free response format. Survey 2 was sent to the first-year class in fall 2022 after the implementation took place in the first PIF small group of the academic year. The survey contained two questions that asked students to rate the extent of support and comfort they felt in their small groups on a 5-point Likert scale. Respondents were recruited via email and posts on the class Slack forums. Responses were collected over a 10-day period.

Results: A total of 25 second-year students responded to Survey 1 (15% response rate). 92% of students shared comments in favor of these proposed changes. A common theme among the responses included an increased sense of comfort and agency students would feel as a result of these changes. One example comment reads, "Regarding optional rather than mandatory [sharing], it allows people to take on the role of starting discussions by sharing their reflections, but only if they feel comfortable doing so. Students may be engaging and reflecting even if they are not sharing their responses, and this rule helps protect that."

A total of 19 first-year students responded to Survey 2 (12% response rate). About 74% of students felt somewhat to extremely comfortable (42% "somewhat" and 32% "extremely") in choosing from a wide selection of critical reflection prompts. In addition, about 89% of students felt somewhat to extremely supported (21% "somewhat" and 68% "extremely") in having the option to share their reflections in their small groups.

Potential Impact: Despite the small sample size, our data shows that students welcome trauma-informed curricular changes. When students' voices and choices are empowered, learning environments can feel more comfortable and supportive. Trauma-informed principles can be applied to content and delivery of PIF curriculum to prevent traumatization and promote engagement.

References:

- 1) Olsen LD. The Conscripted Curriculum and the Reproduction of Racial Inequalities in Contemporary U.S. Medical Education. *J Health Soc Behav.* 2019;60(1):55-68. doi: 10.1177/0022146518821388. Epub 2019 Jan 17.
- 2) Brown T, Berman S, McDaniel K, et al. Trauma-Informed Medical Education (TIME): Advancing Curricular Content and Educational Context. *Academic Medicine.* 2021;96(5):661-667. doi:10.1097/ACM.0000000000003587

Art in Medicine: A Creative Way to Improve Trainee Wellness and Cultivate Empathy

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Problem Statement: The emotional and psychological well-being of trainees is crucial in developing effective, well-rounded physicians and reducing the risk of burnout.

Rationale: As such, the Accreditation Council of General Medical Education (ACGME) encourages research efforts in enhancing trainee wellness.¹ At our institution, faculty and fellows recognize the importance of improving trainee wellness. Art curricula have been introduced into medical education at the medical school and residency levels. Visual arts training has been shown to improve observational skills of medical students and radiology/dermatology residents.^{2,3} Art curricula have also been implemented to allow for reflection of patient experiences, prevent burnout, and improve trainee creativity.⁴⁻⁸ However, these reported curricula are largely focused on visual arts-based training and implemented as a single workshop or over a short period of time. We implemented a longitudinal art curriculum amongst pediatric sub-specialty fellows that incorporated a variety of art forms based on the trainees' interests, with the goal of improving trainee wellness, empathy, and bonding with colleagues.

Methods: A one-year art curriculum for pediatric subspecialty fellows was developed following Kern's six-step approach to curriculum development⁹ and designed around trainee-identified meaningful artforms on a needs assessment survey. All activities were trainee planned/led and completed in 60-120 minutes. Sessions were held monthly during regularly scheduled lectures over the noon hour, but occasionally offered during the fellow retreat or in the evenings. Examples of activities include collaborative playlist creation, collaborative photo collage, instructor-led painting, collaborative cookbook creation, virtual cooking classes, pumpkin painting, pie chart activity (reflection on most meaningful relationships), and painting and planting flowerpots.

Two anonymous surveys (Mayo Clinic Well-Being Index and Qualitative/Quantitative Assessment) were administered prior to the start of the curriculum, at 6-month follow up, and at the end of the 12-month period. Pre-intervention and post-intervention wellness scores and quantitative measures of trainee view of the role of art in medicine were compared using Fisher's Exact Test for non-parametric data and student's t-test for parametric data. Multivariate analyses were performed using linear regression for continuous data and logistic regression for categorical data. Free responses (qualitative data) were assessed using thematic analysis, whereas codes and themes were identified and agreed upon by two independent investigators.

Results: A total of 34 fellows from 5 subspecialties participated in the art curriculum over the 2022-23 academic year. In the baseline Well-Being Index survey (n=32), 62.5% felt burned out from work and 75% felt that they had been bothered by emotional problems. In the Quantitative/Qualitative baseline survey, 75% stated that they had prior experience with art in medicine, but mostly limited encounters. All trainees believed that art plays an important role in medicine by allowing providers to connect more meaningfully to patients, improve patients' quality of life in the hospital, and by relieving work-related stress. At the 6-month follow up (n=26), 65.4% continued to feel burned out from work, but only 57.7% felt they had been bothered by emotional problems. All the trainees found the activities enjoyable. Approximately 73.3% of the fellows reported that their practice of medicine had changed, including improved creativity and observational skills (23.3%), connection with co-workers (20%), and decrease in stress (13.3%). Data from the 12-month surveys has been collected and is currently under analysis by our statisticians. Results will be available by the IME conference in February.

Potential Impact: Our longitudinal art curriculum is unique in that we tailored the art activities to our fellows' specific interests within the arts. The curriculum also demonstrated benefit to our pediatric

fellows. All our trainees found the art activities enjoyable, and most reported that their experience with art in medicine impacted their clinical practice.

References:

- 1) Common Program Requirements [Internet]. [cited 2021 Sep 3]. Available from: <https://www.acgme.org/What-We-Do/Accreditation/Common-Program-Requirements/>
- 2) Goodman TR, Kelleher M. Improving Novice Radiology Trainees' Perception Using Fine Art. *J Am Coll Radiol.* 2017 Oct 1;14(10):1337–40.
- 3) Rana J, Pop S, Burgin S. Using art to improve visual diagnosis: a review. *Clin Teach.* 2020;17(2):136–43.

The BRS Crash Course: A Mixed-Methods Analysis of Novel Near-Peer Teaching in a Spiral Curriculum

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Problem Statement: The current approach to medical education of first-year preclinical students leaves a gap between the faculty-led sessions and individual teaching.

Rationale: Knowledge transfer via faculty-led activity characterises traditional medical education. However, multiple weaknesses of this approach remain (1).

To enhance support for preclinical medical students and foster more interactive learning (2), a novel physiology teaching programme entitled 'BRS Crashcourse' (BRSCC) was introduced at a London medical school.

The programme provided first year students with near-peer support within a spiral curriculum – a spiral curriculum involves delivery of the same content consistently across years, as each additional year further deepens learning of known concepts. Second-year students, who successfully navigated the same curriculum, provided teaching.

Using near-peer experience, BRSCC's objective was to enhance understanding for tutors and tutees, aiding exam preparation. Student perceptions of near-peer teaching is seldom assessed in literature (3), so perceptions on BRSCC's effectiveness were elicited longitudinally.

Methods: BRSCC consisted of one-hour lectures delivered virtually across the year, covering essential physiology topics such as endocrinology and neurology. Each teaching day comprised of 4-5 sessions and was delivered by second-year medical colleagues who had passed the course the year before, but were still learning the same concepts in greater depth. Teaching incorporated live questions and use of anonymous interactive software, such as Mentimeter. This additional learning dimension enabled real-time assessment of learning outcomes and student engagement. Feedback on engagement, content, session structure, usefulness, and aid in conceptual understanding was assessed using a 5-point Likert scale. Once proof-of-concept of BRSCC had been identified in the first year of data collection, data pertaining exclusively to engagement parameters was collected across 2 subsequent years. This data, spanning 2 separate study cohorts, was combined. Quantitative data was analysed descriptively and comparatively via SPSS. Qualitative free-text responses were analysed using a thematic analytical approach. Data skew was assessed via a Kolmogorov–Smirnov test. Mann-Witney U tests were employed to assess for statistically significant differences pre- and post-session. Descriptive data including means, medians and ranges were presented.

Results: 275 responses were elicited across the first-year of the course [40% for neurology teaching (n=109), 21% for endocrinology teaching (n=59), 21% for musculoskeletal system teaching (n=58) and 18% for cardiorespiratory teaching (n=49)]. Pre-session mean confidence was 2.72, post-session mean confidence was 4.18 and a statistically significant 53.7% increase in confidence in participant understanding of physiology content was seen after the session (p=0.001). 77% (n=212) of individuals preferred remote delivery of teaching, when compared to in-person delivery with a further 21% (n=58) citing no preference. Only 2% (n=5) of individuals preferred in-person delivery of teaching. Free-text data suggested the preference for remote delivery was due to convenience, personal cost-effectiveness and ease of focus. 98% (n=270) of individuals preferred the session to be delivered by a near-peer compared to faculty. Free-text responses ascertained that this was primarily due to shared experience, realistic insight into assessment requirements and for a more personable execution style for teaching. Longitudinally across 2 subsequent years of delivering BRSCC, pooled data (n=263) affirmed the concept of BRSCC's effectiveness for engagement. Across scoring of BRSCC as engaging, as at an appropriate level, as structured, as useful and as interactive, mean scores of 91%, 93%, 94%, 93% and 92% were observed respectively.

Potential Impact: The BRSCC has been shown to enhance student learning and engagement via peer support. It reflects positively on near peer teaching, setting a model for others. The interactive format and mentorship aspect may bridge a gap between faculty led learning and individual study, ultimately impacting the quality of early year medical school experience.

References:

- 1) Guraya SY, Abdalla ME. Determining the effectiveness of peer-assisted learning in medical education: A systematic review and meta-analysis. *Journal of Taibah University Medical Sciences*. 2020;15(3):177–84. doi:10.1016/j.jtumed.2020.05.002
- 2) Tuma F. The use of educational technology for interactive teaching in lectures. *Annals of Medicine and Surgery*. 2021;62:231–5. doi:10.1016/j.amsu.2021.01.051
- 3) Hill A, Yu, Wilson, Hawken, Singh, Lemanu. Medical students-as-teachers: A systematic review of peer-assisted teaching during Medical School. *Advances in Medical Education and Practice*. 2011;157. doi:10.2147/amep.s14383

Orienting Residents to Inpatient Pediatric Workflow Using an Escape Room

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Problem Statement: Traditional resident orientation to workflow and the electronic health record (EHR) can be unengaging to learners, limiting their effectiveness.

Rationale: The goal of resident orientation is to prepare the learner to work effectively within their clinical environment. Standard orientation practices include workflow and EHR training traditionally taught with didactics that may be monotonous and unengaging. Medical escape rooms (MERs) are a new teaching modality that uses gamification techniques to engage learners and reinforce knowledge related to tactile and task-driven objectives (Gifford, 2020). MERs may also increase social capital, communication, and teamwork amongst healthcare workers (Lundholm, 2022). The purpose of this project was to determine the educational impact of a MER implemented during resident orientation, specifically, comfort with foundational skills pertinent to the hospital admission and discharge processes and trainee satisfaction.

Methods: A single-center survey-based cohort study of 12 incoming pediatric residents was conducted at a free-standing children's hospital following traditional EHR classroom training and MER participation. The MER was designed to bolster the knowledge, skills, and comradery amongst incoming residents during orientation to a pediatric inpatient unit. Learning objectives were incorporated into the MER via gamified tasks such as lock-box codes, puzzles, and riddles. Participants were required to complete tasks from typical inpatient workflow and EHR use including admission, discharge, medication reconciliation, and interdisciplinary communication processes in order to advance through the MER. The MER was held within the inpatient and emergency departments to increase fidelity. Residents were allotted 2 hours for the MER. A Likert-scale retrospective comparison survey assessed participant comfort level with the inpatient workflow, teamwork, entrustment, and satisfaction and MER completion times were tracked. Descriptive statistics, medians, and paired responses were compared using Wilcoxon signed-rank test. Survey responses are scored 1 to 5 (1= strongly disagree, 2= slightly disagree, 3= neutral, 4= slightly agree, 5= strongly agree).

Results: 75% of participants had previously participated in an escape room. 92% of participants had previous experience with our local EHR, Epic. Pre- and post- escape room surveys showed an increase in participant comfort with navigating the physical hospital (median score = 4 (IQR 2.5-4) to 5 (IQR 4-5, $p = 0.008$)). Following the escape room experience, there was a 1-point increase in participant comfort with using the EMR for an admission (median score = 4, IQR 4-5 vs. 3, IQR 2-4, $p = 0.004$) and for a discharge (median score = 4, IQR 4-4.5 vs. 3, IQR 2-3, $p = 0.001$). Comfort with interdisciplinary communication remained the same (median score = 4, IQR (2.5- 4 vs 4-5); $p = 0.02$). Participants strongly agreed that that the escape room activity increased their trust (median score = 5, IQR 4.5-5) as well as their communication (median score = 5, IQR 4.5-5) with their co-residents. The average time needed to complete the escape room was 76.1 minutes (95% CI = 57.7-94.6)

Potential Impact: Our study found that a MER increased participant comfort with knowledge-based skills of navigating the physical environment, EMR use, and entrustment of co-residents. Gamification, such as MERs, may enhance the effectiveness of learner orientation. Future studies will be directed towards the long-term impact and potential uses of MERs.

References:

- 1) Kimberly A. Gifford, Eunjung Choi & Kelly A. Kieffer (2023) Resources for clinical learning environment orientation, *Medical Education Online*, 27:1, DOI: 10.1080/10872981.2021.2013404
- 2) Michelle D. Lundholm, Kevin P. Simpson & Laura Ozark (2022) A medical escape room to build intern workplace social capital in an internal medicine residency program, *Medical Teacher*, 44:5, 546-550, DOI: 10.1080/0142159X.2021.2005243

Long-Term Impact of Cardiac Auscultation Training Using Educational Technology for Medical Learners

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Problem Statement: Current studies do not adequately elucidate the impact of educational technology use on long-term skill retention in medical learners over time.

Rationale: Educational Technology (ET) refers to the use of technology and electronic media resources to augment traditional learning processes. It encompasses wide-ranging software and hardware applications including digital games, mobile apps, simulation, and virtual reality. Educational technology can be used in medical training to enhance clinically-relevant technical skills prior to direct patient contact. Most cardiology-based medical education studies measure student satisfaction and outcomes metrics immediately following intervention, but few published studies evaluate both comparative AND longitudinal outcome tracking. This study aims to elucidate learner outcomes of an experimental cardiac auscultation ET user group to a non-user control group both immediately and over time. Research tracking comparisons of user and non-user groups over time will help medical educators make informed decisions on when and/or how to integrate ET into medical curricula.

Methods: Physician Assistant (PA) students at one institution were evaluated for knowledge and skills retention. An ET user group was compared to a non-user control group. The ET group consisted of PA students who learned cardiac auscultation via a mobile app curriculum (Littmann Learning™). The control group learned cardiac auscultation via traditional classroom lectures. Knowledge and auscultation outcomes were compared between groups at 12 and 16 months following completion of their respective curriculums. At 12 months, all groups completed PI-created knowledge and cardiac auscultation assessments. In the 12-item knowledge section, students were asked to identify an abnormal heart sound through a text description. In the 14-item auscultation section, students listened to a heart sound and were asked to determine if a murmur or abnormal heart rhythm was present. Statistical analysis was performed using one-way ANOVA. At 16 months, multiple external data points were reviewed, including 1) Multiple choice question (MCQ) cardiology scores of their Physician Assistant Clinical Knowledge Rating and Assessment Tool (PACKRAT) and 2) Cardiology scores of all components of their Final Summative Exam (FSE). The PACKRAT is a 225-item MCQ exam and comprehensive self-assessment tool. The FSE is a multi-part cumulative exam, required for graduation. The FSE includes MCQ, short answer, and practical (auscultation) assessments. Assessments at 16 months were analyzed via F-Test in one-way ANOVA.

Results: A total of 216 PA students at one institution were included in the study (131-ET users and 85-non-ET users). Groups were similar in age, sex, and prior clinical experience. At the end of the curriculum (immediately following implementation of the ET), the average knowledge and auscultation scores for the PI-created assessments were 98.75% (SD=0.63) and 92.12% (SD=1.14), respectively. Nearly 70% of these students believed the ET training will heighten their knowledge of cardiology in a clinical setting and nearly 80% believed the ET training made them more confident to recognize an abnormal heart sound in the clinical setting. At 12 months, the average knowledge and auscultation scores of the same PI-created assessments in the ET user group were 74.05% (SD=19.24) and 92.03% (SD=10.52), respectively. This is compared to the non-ET group who scored 72.84% (SD=18.55) and 86.92% (SD=8.44), respectively. The scores of the user group were significantly higher than the non-user group for in the auscultation assessment only ($p>0.01$, Effect Size (ES)=0.51). At 16 months (and after both groups had completed 10 months of clinical training), the ET group scored higher on the FSE MCQ (89.32% vs. 87.55%; ES= 0.111) and on the PACKRAT (77.30% vs. 71.62%; ES= 0.269), but lower on the FSE- auscultation interpretation station (79.55% vs. 88.24%; ES= 0.106). The two groups scored similarly on the FSE short answer (85.55% vs. 85.03%; ES=0.021).

Potential Impact: Integration of educational technology into clinical training is beneficial for primary competency of cardiac auscultation but is not a direct replacement for traditional learning. An inverse effect size relationship between methods over time suggests additional studies will be advantageous for determining most effective timing for implementation.

References:

- 1) Breunig M, Plooster C, Huckabee M. Physician Assistant Students' Perspective on Ultrasound as an Educational Technology. *JPAE*. 33(3):253-256, September 2022.
- 2) Bell A, Salcido E, Reichhart N, Moverley J. Multi-Institutional Physician Assistant Student Perception of Simulated Emergency Room Cases. *JPAE*. 33(4):p 291-295, December 2022.
- 3) Garvick S, Gillette C, Gao H, Bates N, Waynick J, Crandall S. Can cardiac auscultation accuracy be improved with an additional app-based learning tool? *Clin Teach*. 2022; 1– 9.

An Interdisciplinary Escape Room to Improve Trainees Knowledge and Skills in Event Reporting

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Problem Statement: Nationally, academic institutions continue to struggle with increasing the rate of patient safety event reporting.

Rationale: Despite ongoing patient safety initiatives in essentially all healthcare institutions, adverse events remain all too common, occurring in nearly 25% of hospitalized patients (1). Additionally, adverse event reporting is estimated to capture only 14% of all events (2). Teaching institutions are required by the ACGME to provide a structured curriculum focusing on quality improvement and patient safety (QIPS) tenets. However, academic medical institutions struggle to successfully develop and implement such curricula (3). As part of our institution's QIPS curriculum for residents and fellows, we developed an interdisciplinary escape error room to determine knowledge and skills among our trainees related to event reporting.

Methods: We utilized gamification and experiential learning as our underlying educational theories to develop two high fidelity medical simulation escape rooms inspired by Diemer et al (2019). Possible participants were residents and fellows from multiple specialties at one institution who participated in the escape error room between April 2022-May 2023. The cases were developed through group consensus from an interprofessional team of safety experts, physicians, nurses and educators. Each room consisted of 19 realistic adverse events/safety threats. Some of these threats were physically in the room while others were imbedded into our EMR utilizing the playground feature of EPIC. Following a brief introductory lecture, learners were split randomly into two groups of 6-8 learners. They were given 20 minutes for each of two rooms to: (1) find/resolve as many safety threats as possible and (2) "escape" which required them to submit a patient safety event report in our internal reporting system (IDInc). Each room had two trained observers who also served as room moderators to assist with questions in the room. We utilized the New World Kirkpatrick Model (NWKM) levels 1-2 as our program evaluation framework to analyze data from participants reported in counts and percentages. Data collection tools included the Jefferson Teamwork Observation (JTO) Tool, Brookfield Critical Incident Report combined with Plus Delta, and a Satisfaction and Feedback Questionnaire.

Results: One hundred and thirty learners participated in the escape rooms over two years. There were 78 residents (60%) and 52 fellows (40%) across 16 specialties/sub-specialties. 49% were female, 46% male and 5% preferred not to say. In the pre-course survey, 104 (80%) of learners reported that they had never submitted a patient safety event report prior to this training. Through the participant satisfaction and feedback survey, 100% strongly agreed or agreed that this educational activity had clear goals and was organized (NWKM level 1: Customer Satisfaction). When considering their real-world clinical practice, 123 (95%) felt the escape error room was relevant to their needs as a physician in training (NWKM level 1: Relevance), 122 (94%) reported being more comfortable navigating and submitting a patient safety event report (NWKM level 2: Knowledge, Skill, Confidence) and 108 (83%) reported that because of this training they were more likely to submit an event report in the future (NWKM level 2: Commitment). Trained observers utilized the JTO tool to assess participants' communication, teamwork and leadership during the escape room and found 100% of team members were involved and contributed (NWKM level 1: Engagement). Additionally, 88% of the time, observers witnessed teams listening to one another's ideas and considered their input prior to pressing their own ideas (NWKM level 2: Skills, Attitude). However, only 31% of the time, was a team leader identified.

Potential Impact: Successfully engaging training physicians in event reporting remains a significant challenge despite formalized curriculum. However, this educational modality shows significant promise in achieving learner engagement, improving confidence and ongoing willingness to submit future patient safety event reports.

References:

- 1) Bates DW, Levine DM, Salmasian H, Syrowatka A, Shahian DM, Lipsitz S, Zebrowski JP, Myers LC, Logan MS, Roy CG, Iannaccone C, Frits ML, Volk LA, Dulgarian S, Amato MG, Edrees HH, Sato L, Folcarelli P, Einbinder JS, Reynolds ME, Mort E. The Safety of Inpatient Health Care. *N Engl J Med*. 2023 Jan 12;388(2):142-153. doi: 10.1056/NEJMsa2206117. PMID: 36630622.
- 2) Office of Inspector General, Department of Health and Human Services. (2012, January 5). Hospital Incident Reporting Systems Do Not Capture Most Patient Harm. <https://oig.hhs.gov>. Published January 5, 2012. Accessed September 28th 2023. <https://oig.hhs.gov/oei/reports/oei-06-09-00091.asp>
- 3) Weiss KB, Co JPT, Bagian JP; CLER Evaluation Committee. Challenges and Opportunities in the 6 Focus Areas: CLER National Report of Findings 2018. *J Grad Med Educ*. 2018 Aug;10(4 Suppl):25-48. doi: 10.4300/1949-8349.10.4s.25. PMID: 30156219; PMCID: PMC6108555.

Creation and Implementation of Racially Inclusive Surgical Simulation Models in Medical Education

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Problem Statement: Lack of diversity in surgical training materials hinders cultural competence in medical education.

Rationale: In medical education, the underrepresentation of diverse racial backgrounds in surgical simulation models has long been a challenge. This limitation can perpetuate biases, stereotypes, and lack of cultural understanding among medical students and professionals. This project aims to address the issue by creating racially inclusive surgical training models and integrating them into medical school curriculum. This innovation promotes diversity, equity, and inclusivity in medical education, ultimately improving patient care outcomes and reducing healthcare disparities.

Methods: The primary goal of this project is to enhance cultural competence, improve suturing skills, and provide a realistic surgical training experience for medical students. The methods can be organized into three parts: creation of the models, integration of the models into medical school curriculum, and data collection. The first phase involves the design and development of anatomically accurate surgical simulation models representing diverse racial backgrounds. These models, designed through a unique collaboration between surgeons and medical artists, represent a spectrum of racial background. The simulation models include seven different skin tones, ranging from highly melanated to lightly melanated. The next phase involves the integration of these racially inclusive surgical models into medical curriculum. They are used during surgical skills training sessions. The target learners of this project include 125 third-year medical students at the University of Florida (UF) who participate in the surgical training workshop. The students cycle through the surgical skills training sessions every 8 weeks for 9 months. The final phase is data collection. Participants complete a mixed-method survey after they have interacted with the models. The survey is designed to collect both quantitative and qualitative data to assess the impact of the learning exercise.

Results: So far, this project has yielded highly positive results, supported by both qualitative and quantitative data. Of 58 third-year medical students at the University of Florida who participated in this study so far, 89% reported improved suturing skills and 95% found the suture pads effective for training. A significant 79% agreed the pads realistically simulated human tissue. The survey also highlighted the impact on learning and diversity. Only 17% had worked with diverse models before, with 87% agreeing that increased racial representation improved the learning experience. Furthermore, 85% believed practicing on diverse skin tones would enhance their patient care skills, also 83% felt their skin color was represented among the pads. Feedback from faculty and students further confirmed positive outcomes. Students found the suture pads closely mimicked live human tissue and allowed for diverse suture techniques practice. Faculty observed increased student engagement, with students noting the realistic learning experience and an opportunity to address implicit biases. In summary, the project produced overwhelmingly positive results, with clear links to improved suturing skills, effective training, realistic simulation, enhanced learning, and increased cultural understanding.

Potential Impact: This project demonstrates the potential for innovation in medical education by bridging disciplines, promoting diversity, and enhancing cultural sensitivity. Racially inclusive surgical models can lead to better prepared medical professionals and in turn lead to better patient care outcomes and a more equitable healthcare system.

References:

- 1) Haider, A. H., Sexton, J., Sriram, N., & Cooper, L. A. (2011). Association of Unconscious Race and Social Class Bias with Vignette-Based Clinical Assessments by Medical Students. *Journal of the American Medical Association*, 306(9), 942–951. <https://doi.org/10.1001/jama.2011.1248>
- 2) Conigliaro, Rosemarie L. MD; Peterson, Kerstin D. MA-TESL; Stratton, Terry D. PhD. Lack of Diversity in Simulation Technology: An Educational Limitation?. *Simulation in Healthcare: The Journal of the Society for Simulation in Healthcare* 15(2):p 112-114, April 2020. | DOI: 10.1097/SIH.0000000000000405
- 3) Foronda, Cynthia; Prather, Susan L.; Baptiste, Diana; Townsend-Chambers, Colette; Mays, Linda; Graham, Crystal. Underrepresentation of Racial Diversity in Simulation: An International Study. *Nursing Education Perspectives* 41(3):p 152-156, 5/6 2020. | DOI: 10.1097/01.NEP.0000000000000511

The Use of Music in Medical Education to Promote Deep Listening and Awareness of Self and Others

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Idea: Though essential for clinical care, skillful listening is undervalued [1]. Educational innovations developing skills of close listening are needed.

Need: Narrative medicine is a branch of health humanities that engages groups with close observation and interpretation of creative works in group settings in order to develop skills of attention and affiliation. The ultimate goal of such activities is to develop narrative competency – the ability to skillfully listen to and interpret stories of patients.

Narrative medicine has typically engaged students with media such as literature, visual art, and film. However, engagement with music and sound is less commonly found in curricula. This is a notable absence given listening is central to the receipt of patient narratives. In addition to listening to patient stories, an awareness of the auditory clinical environment is needed to appreciate the context in which care occurs.

Given this gap, we designed and implemented a 2-hour narrative medicine session for 3rd year Kaiser Permanente Bernard J. Tyson School of Medicine (KPSOM) students that involved engagement with music and ambient sound.

Methods: The required 2-hour session was delivered to 3rd year medical students at KPSOM in July 2023. The session was facilitated by co-authors K.S and D.G.

The session objectives were: 1) Experience active listening and interpretation, 2) Describe how team structure and communication contributes to collaboration in music and in medicine, 3) Describe one's emotion and cognition in response to creative work, and 4) Describe how the auditory clinical environment can influence emotion, cognition, and health.

1. "What can jazz teach us?" Students watched a video recording of Miles Davis, John Coltrane, and band performing "So What". Discussion explored the following as applied to both jazz and medicine: improvisation, nonverbal communication, and sharing the spotlight with members of a team.
2. "Listening to an Orchestral Work" Students were invited to choose from a list of suggested listening strategies during Florence Price's Andante moderato. Discussion explored the following: formal aspects of the music; emotions, associations, and memories; and the meaning or story the work was telling.
3. "Sounds of the Clinical Environment" Students were invited to listen to the ambient sounds of contrasting clinical environments before discussing the effects of sound on healing and skillful listening.
4. Alive Inside: Students watched clips of this 2014 documentary that explores the healing properties of music for patients with dementia.

Evaluation Plan: Evaluation will ask participants to rate their agreement with the following statements: I learned how the practice of listening could be valuable to clinical work; the exploration of jazz and symphonic music creation was a useful framework to explore healthcare team collaboration and communication; Listening to music and debriefing allowed greater awareness of my emotions and associations; It was useful to explore how music can be a tool for restoration and connection with the self for patients and care providers alike. Preliminary pilot data collection showed that the majority of students agreed or strongly agreed with these statements.

Students will also reflect on the following: How has your awareness of the auditory environment changed, if at all, as a result of this session? How might your approach to clinical work change as a result of this session? What new ideas or thoughts emerged as a result of this session? Preliminary feedback was enthusiastic: “I was reminded of how powerful music can be in transformation,” “[I will make] use of my hearing senses more often in clinical spaces to be aware of what I and patients hear,” and “[New ideas include] more advocacy around reducing harm from noise in clinical spaces.”

Potential Impact: The receipt of narratives requires skillful listening, and music hones that skill. Auditory environments affect health outcomes; awareness of this enables healing [2-5]. We explore music performance as a model for effective team function, in addition to student-faculty collaboration in session design and delivery – a promising educational model.

References:

- 1) Singh Ospina, N., Phillips, K. A., Rodriguez-Gutierrez, R., Castaneda-Guarderas, A., Gionfriddo, M. R., Branda, M. E., & Montori, V. M. (2019). Eliciting the patient’s agenda-secondary analysis of recorded clinical encounters. *Journal of general internal medicine*, 34, 36-40.

- 2) Aaron JN, et al. Environmental noise as a cause of sleep disruption in an intermediate respiratory care unit. *Sleep* 1996; 19: 707–10.
- 3) van de Pol I, et al. Effect of nocturnal sound reduction on the incidence of delirium in intensive care unit patients: an interrupted time series analysis. *Intensive and Critical Care Nursing* 2017; 41: 18–25.

4. Salluh JI, et al. Delirium epidemiology in critical care (DECCA): an international study. *Critical Care* 2010; 14: R210.

5. Darbyshire JL, et al. Mapping sources of noise in an intensive care unit. *Anaesthesia*. 2019 Aug;74(8):1018-1025

Using Interprofessional Education to Meet the Mental Health Needs of Farmworkers

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Idea: Train students from three health professional programs to work in teams to meet the mental and behavioral health needs of farmworkers via telehealth.

Need: Farmworkers have high levels of stress and have elevated prevalence of mental and behavioral health issues (National Center for Farmworker Health, 2021). They also experience numerous cultural (e.g., stigma) and structural (e.g., lack of transportation) barriers to mental health care (Yunker and Radunovich, 2021). Health professionals practicing in rural areas are often unaware of or feel unprepared to meet that need. Furthermore, since these areas often experience high turnover rates of health professionals, effective and efficient teamwork is critical to maximizing positive patient outcomes (Carney et al., 2021). Training students to work together to deliver culturally-competent care to farmworkers via telehealth will give them the knowledge, awareness, and skills to engage with this underserved population in their future practices. Adding an interprofessional education (IPE) component also prepares students for their future careers, equipping them with skills that result in better patient outcomes. To our knowledge, no IPE curriculum exists to equip students in the health care professions to deliver mental health care to this underserved population.

Methods: We have developed and are currently piloting an IPE curriculum with six health professional students from Mercer University's Medical Doctor, Physician Assistant, and Marriage and Family Therapy programs (two students per program). Students will work in interprofessional teams to engage in approximately 15 hours of synchronous and asynchronous didactic sessions consisting of short lectures, clinical case vignettes, group activities, and personal reflections. Content for these sessions will map onto domains from both the AAMC's Telehealth Competencies for entering resident physicians and SAMHSA-HRSA's Center for Integrated Health Solutions' Core Competencies for Integrated Behavioral Health and Primary Care. Didactic sessions will run from August 2023-February 2024, at which time interprofessional teams will engage in three simulated patient experiences of escalating complexity specific to farmworker mental and behavioral health. The pilot project will culminate in an opportunity for teams to use their newly acquired skills at a farm in Toombs County, Georgia during a pop-up health clinic.

Evaluation Plan: As a pilot, our primary outcomes of interest are feasibility and acceptability. Short evaluations after didactic sessions will allow students to provide real-time feedback on curricular content and delivery methods. Students will also be given pre- and post-surveys on cultural humility, interprofessional learning, telehealth attitudes and self-efficacy to ensure the training curriculum successfully impacts content knowledge and addresses learning objectives. Simulated patient experiences will be evaluated by community health and clinical preceptors and feedback provided to student interprofessional teams to improve students' skills. Finally, we will conduct semi-structured one-on-one exit interviews with each student to gain a more nuanced evaluation of the project's success. For farmworkers, we will measure the impact on participating individuals at the pop-up clinic with several process outcomes: number of farmworkers screened, number of telehealth visits, and number of patients served. We will also administer a short survey to patients before receiving mental health services to allow us to understand their health concerns and services use, current barriers to care, and acceptability of telehealth and mental health care.

Potential Impact: This project will develop an innovative method to meet the mental health needs of an underserved population. By addressing these issues, we aim to reduce the stigma and lack of help-seeking prevalent among farmworkers, while also removing structural barriers that inhibit receiving necessary care. Future work will expand and scale-up the project.

References:

- 1) Carney, Patricia A., Cirila Estela Vasquez Guzman, Cynthia Taylor, Debbie Cole, Joyce Hollander-Rodriguez, Tamara Rose, and Eric Wiser. 2021. "Health Professional Students' Observations about Interprofessional Collaborative Practice during Rural Clinical Rotations." *Journal of Interprofessional Education & Practice* 25 (December): 100471. <https://doi.org/10.1016/j.xjep.2021.100471>.
 - 2) National Center for Farmworker Health. 2021. "Agricultural Workers and Mental Health." <https://www.ncfh.org/mental-health-fact-sheet.html>.
 - 3) Carney, Patricia A., Cirila Estela Vasquez Guzman, Cynthia Taylor, Debbie Cole, Joyce Hollander-Rodriguez, Tamara Rose, and Eric Wiser. 2021. "Health Professional Students' Observations about Interprofessional Collaborative Practice during Rural Clinical Rotations." *Journal of Interprofessional Education & Practice* 25 (December): 100471. <https://doi.org/10.1016/j.xjep.2021.100471>.
- National Center for Farmworker Health. 2021. "Agricultural Workers and Mental Health." <https://www.ncfh.org/mental-health-fact-sheet.html>.
- Yunker, Terasa, and Heidi Liss Radunovich. 2021. "Farmer Mental Health Interventions: A Systematic Review." *International Journal of Environmental Research and Public Health* 19 (1): 244. <https://doi.org/10.3390/ijerph19010244>.

The Digital Shift: Assessing ChatGPT's Capability as a New Age Standardized Patient in a Medical Cur

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Idea: Can ChatGPT function effectively as a virtual Standardized Patient (SP)?

Need: Historically, standardized patients (SPs) have been a cornerstone in medical education since the 1960s. They offer students an immersive, real-world experience. Cleland et al. found them superior for teaching consultation skills compared to traditional methods (Cleland et al., 2009).

Despite the demonstrated utility of SPs in medical education, there are often inadequate opportunities for students to interact with SPs during their courses. Training of SPs is time-consuming and costly. With a large cohort of undergraduate students, sessions with SPs are often limited in number, and in some cases, not available at all.

The release of the Large Language Model (LLM) ChatGPT (OpenAI, San Francisco CA) in November 2022 has opened new possibilities, including in medical education.

Our study's objective was to evaluate ChatGPT's potential as a virtual SP and its possible integration into our medical curriculum. With OpenAI's Enterprise account, there is potential for all our students to access ChatGPT 4 (the latest version) upon enrolment.

Methods: We conducted a qualitative study with student volunteers, guiding them before and after interacting with ChatGPT. Using a few-shot approach, we defined ChatGPT's role, setting clear expectations, such as not revealing the simulated disease.

Twelve 1st-year medical student volunteers were recruited into the study. Students were given access to paid ChatGPT 4 accounts. A questionnaire was administered before and after interaction with ChatGPT in the role of an SP. Students were asked about specific elements of their interaction. Students were observed during the role-play, in which a student inputted a predetermined prompt into ChatGPT, allowing the LLM to present as a patient with a neurological condition. The student then interviewed ChatGPT in the role of a physician and attempted to make a differential diagnosis. The interview was conducted verbally, as we had added a voice control extension to the ChatGPT accounts, allowing natural verbal interaction between the student and the program. The interviews and role plays were conducted over the space of one day on campus.

Evaluation Plan: We used content analysis to examine the qualitative data from the pre- and post-roleplay interviews, as well as the transcripts of the verbal interactions between the students and ChatGPT. We used NVivo 14 to code and categorize the main themes and patterns in the data and to generate reports and visualizations of the results. We used statistical analysis to examine the quantitative data from the questionnaires that we administered to the students. We used NVivo 14 to perform descriptive and inferential statistics on the data, such as frequencies, means, standard deviations, t-tests, ANOVA, and correlation. We used a paired-samples t-test to compare the mean scores of students' attitudes, perceptions and confidence before and after interacting with ChatGPT. We used a one-way ANOVA to compare the mean scores of students' performance on the differential diagnosis between ChatGPT and a traditional SP. We used a Pearson correlation to examine the relationship between students' satisfaction with ChatGPT and various factors, such as their prior experience with SPs, their interest in neurology, and their level of engagement with ChatGPT. We used a significance level of 0.05 for all statistical tests. Analysis is ongoing.

Potential Impact: This project will potentially provide a much-needed boost to medical students' options in terms of clinical skills training. By increasing the number of times students can practice patient

interviews, the project could improve students' knowledge, confidence, clinical, and interpersonal skills in a cost-effective manner.

References:

- 1) Cleland, J. A., Abe, K., & Rethans, J. J. (2009). The use of simulated patients in medical education: AMEE Guide No 42 1. In *Medical Teacher* (Vol. 31, Issue 6, pp. 477–486). Informa Healthcare. <https://doi.org/10.1080/01421590903002821>

Bridging the Gap: Establishing a Disability-Competent Care Curriculum for Medical Students

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Idea: We created the Disability Selective to train medical students on how to provide disability competent care using a multimodal educational approach.

Need: One in four adults in the United States, or 83 million individuals, live with a disability (1). People with disabilities face chronic health issues and barriers to quality healthcare, including ableism, inaccessible facilities, inadequate health education, and unprepared providers, leading to poor health outcomes (1). To address this, some medical schools have implemented disability-health topics into their curriculum; however, the majority of schools lack formalized training using multimodal approaches on working with this patient population (2). In order to fill this training gap, we created a fully student-led curriculum for third- and fourth-year medical students to learn more about disability healthcare using a biopsychosocial framework. Our curriculum engages students through educational modules, community-based clinic engagement, and narrative medicine discussion. Our community-based approach allows students to collaborate with healthcare teams and community members when learning how to provide high-quality, interprofessional healthcare to people with disabilities. Ultimately, by completing the Disability Selective, medical students will have gained the skills and knowledge necessary for providing disability-competent care.

Methods: Using the biopsychosocial model as a framework, our curriculum for the Disability Selective at UC Riverside School of Medicine offers three modes of learning: didactic lessons, clinical visits to disability centers, and narrative medicine. This allows students to explore individual's personal experiences and sociocultural contexts for a more holistic, patient-centered, and culturally sensitive approach to disability-competent care. Open to third and fourth-year medical students, they can enroll for 2 or 4 weeks. The curriculum primarily provides clinical experiences at Autism care centers, neurology clinics, public health departments, and health insurance disability programs. Students are required to interview a patient and a clinician to understand their experiences in healthcare for those with disabilities. The course includes six modules covering topics like transitioning from pediatric to adult disability care, advocacy, disability law, and accessible technology. Discussions on these modules and clinical experiences occur through narrative medicine sessions woven around writings and art of persons with disability. The curriculum aims to meet specific AAMC physician core competencies. To gauge its effectiveness, students take pre- and post-curriculum surveys, assessing their knowledge and confidence in caring for patients with disabilities. These surveys, featuring Likert scales, multiple-choice, and open-ended questions, also gather student feedback on the course.

Evaluation Plan: Using Kirkpatrick's model for evaluating programs, students have completed mixed method pre- and post-experience surveys assessing their reaction and change in knowledge, skills, and attitudes (3). Preliminary results show that students report increased comfort in providing care to persons with disabilities after completing the selective. In addition, students scored higher on multiple choice questions assessing knowledge and skills. In narrative response questions and reflective essays, students expressed appreciation of direct, hands-on encounters with patients with disabilities as it increased their awareness of health barriers. They also reported insights on the complex intersections of disability, self-determination and vulnerability. Current survey data collection is ongoing, and the study will continue to survey more students throughout the next year. Ultimately, the results of this study will allow medical schools to understand gaps in their curriculum and student's competency in providing care to patients with disabilities. This selective can be adapted and integrated into other medical school curriculums in order to promote standardized disability care to all medical students.

Potential Impact: Integrating a disability-based curriculum into medical schools that uses a multimodal approach to understand the biopsychosocial model of disability care will allow students to gain didactic

and practical exposure in providing care. This will ultimately improve students' ability to provide disability-competent care.

References:

- 1) Centers for Disease Control and Prevention. (2023, May 15). Disability impacts all of us infographic. Centers for Disease Control and Prevention. <https://www.cdc.gov/ncbddd/disabilityandhealth/infographic-disability-impacts-all.html>
- 2) Ali A, Nguyen J, Dennett L, Goetz H, Rashid M. A scoping review for designing a disability curriculum and its impact for medical students. *Can Med Educ J.* 2023 Jun 27;14(3):75-86. doi: 10.36834/cmej.74411. PMID: 37465749; PMCID: PMC10351622.
- 3) Heydari MR, Taghva F, Amini M, Delavari S. Using Kirkpatrick's model to measure the effect of a new teaching and learning methods workshop for health care staff. *BMC Res Notes.* 2019 Jul 10;12(1):388. doi: 10.1186/s13104-019-4421-y. PMID: 31292006; PMCID: PMC6617554.

Using a New Visual Model to Teach Positive Professionalism Through Emotional Intelligence Skills

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Idea: To establish a unified understanding of positive professionalism and to teach four specific practical positive behavioral skills

Need: The mandate to teach and assess professionalism in accredited residencies is well known but the path to do so remains challenging. Much of the challenge begins with a lack of consensus about the meaning of professionalism which may result in ambiguity surrounding expectations concerning professional behavior.¹ Enhanced professionalism has been noted to decrease stress, increase engagement, and improve the learning and work environments and result in better patient outcomes. Early introduction to these topics can clarify the concept and facilitate the integration of professionalism into one's career and professional identity. This elective is a strategic element in the Center for Professionalism's plan to facilitate the creation of a deeper commitment and systemic approach to professionalism development at Baylor College of Medicine. We hope by establishing a unified vision of professionalism there will be a positive impact on the learning and work environment.

Methods: We began by gathering multiple reviewers with expertise in clinical medicine, medical teaching, professionalism, quality improvement, emotional intelligence, and physician wellbeing.² This group performed an analysis of the peer reviewed literature, institutional responses to the learning environment survey and the professionalism concerns reported to the Center for Professionalism. We created a conceptual model defining the why, what, and how of professionalism. A visual model can present which can simplify concepts and transmit them quickly and memorably.³ As visual learning is enhanced by adding additional educational modalities, we created an interactive professionalism curriculum supported by the visual model. We began with educational goals and learning objectives, reached through consensus by our foundation committee to include multiple viewpoints and mitigate bias. The sessions integrate videos, storytelling, role playing, and didactics to offer opportunities to develop skills in a supportive and psychologically safe setting. Each session ends with self-reflection. The course consists of eight one-hour sessions. The course was approved by the Baylor College of Medicine Curriculum Committee for pre-clinical students, limiting each semester to a maximum of 15 students.

Evaluation Plan: Using the Kirkpatrick evaluation model to measure participant behaviors and feedback will help us assess and improve the content.

The Kirkpatrick Model levels are:

Level 1, Reaction: What did the participants think of the program? Would they recommend this course to a colleague?

Level 2, Learning: Did the participants obtain new knowledge or beliefs?

Level 3, Behavior: Do participants intend to incorporate the new skills into their behaviors?

Level 4, Results: In the final session each participant provides qualitative feedback concerning their overall experience with the course and demonstrates an aspect of the program that impacted them personally through creative writing, creation of a video, musical performance, narrative. We will resurvey the participants two months after completion of the elective to determine the elective's impact on behaviors and understanding of professionalism.

To date, 22 students have completed the elective. 100% would recommend the elective. 100% felt the content of the elective encouraged them to incorporate professionalism into their behaviors.

Potential Impact: A shared vision of positive professionalism has benefits for the entire health care system. This elective initiates our plan to disseminate the consistent content throughout the broader

Health Science Center community to develop understanding of the power of professionalism and the associated behaviors.

References:

- 1) Alexis DA, Kearney MD, Williams JC, Xu C, Higginbotham EJ, Aysola J. Assessment of Perceptions of Professionalism Among Faculty, Trainees, Staff, and Students in a Large University-Based Health System. *JAMA Netw Open.* 2020 Nov 2;3(11):e2021452. doi: 10.1001/jamanetworkopen.2020.21452. PMID: 33226428; PMCID: PMC7684446.
- 2) Brennan MD, Monson V. Professionalism: good for patients and health care organizations. *Mayo Clin Proc.* 2014 May;89(5):644-52. doi: 10.1016/j.mayocp.2014.01.011. PMID: 24797645.
- 3) Roth CG, Eldin KW, Padmanabhan V, Friedman EM. Twelve tips for the introduction of emotional intelligence in medical education. *Med Teach.* 2019 Jul;41(7):746-749. doi: 10.1080/0142159X.2018.1481499. Epub 2018 Jul 21. PMID: 30032720.

Elder Capacity Assessment and Mistreatment Fellowship

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Idea: Create the first clinical fellowship for physicians in elder capacity assessment and mistreatment through medical, legal, and community partnerships.

Need: Approximately 10% of older adults suffer mistreatment annually, but it is estimated that only 1 in 24 cases are reported to authorities (Lifespan of Greater Rochester, 2011). Additionally, mistreatment and incapacity are under-detected and under-reported by those in health and social services, even with mandatory reporting laws in place. Cognitive impairment, including dementia and resulting incapacity, is an important risk factor for elder mistreatment (Dong, 2014). The harms of elder mistreatment are numerous, but include heightened morbidity, multiple-fold mortality increases, and a cost of tens of billions of dollars annually (National Council on Aging, 2021).

Until now, no formalized medical training existed for physicians to learn the nuanced clinical skills required to care for this population in jeopardy. This is in stark contrast to Pediatric Medicine, which has a dedicated three-year clinical Child Abuse fellowship. The creation of the flagship one-year clinical fellowship in Elder Capacity Assessment and Mistreatment for interested adult medicine physicians would help ensure that there are enough comprehensively trained physician leaders to assess and minimize the harms occurring to vulnerable adults every day.

Methods: The proposed Elder Capacity Assessment and Mistreatment fellowship would be a single year composed of multidisciplinary and specialty opportunities, focused and intensive clinical training, and research and scholarly experiences. Consideration would be given to any physician having completed residency, but preference would be for those trained in Geriatric Medicine, Internal Medicine, Family Medicine, Emergency Medicine, Neurology, and Psychiatry.

The clinical fellowship would entail virtual/telemedicine and in-person training with Geriatricians in capacity assessment, medical record and Employee Misconduct Registry mistreatment case reviews, and expert witness testimonies; Neurologists specializing in cognitive impairment, traumatic brain injuries, and intellectual and developmental disabilities; Neuropsychologists trained in neuropsychiatric testing; Geriatric Psychiatry; Adult Protective Services; Pathologists/Medical Examiners; elder/criminal law attorneys; elder mistreatment and mental health law enforcement; and forensic nurses. There would also be longitudinal experiences with several multidisciplinary teams and meetings, and opportunities for further study at national sites of excellence in elder mistreatment.

To ensure the viability of a fellow's future career in this niche area of adult medicine after graduation, partnerships with academic, legal, and community agencies would be established to support career and financial security for graduating fellows.

Evaluation Plan: This fellowship will be created and sustained by:

- Harnessing and nurturing existing relationships with interdepartmental faculty at UTHealth and elder mistreatment prevention champions in community agencies
- Identifying key stakeholders to financially support the fellowship and future fellows
- Formalizing key curricular, educational, and milestone goals for the fellowship
- Establishing and growing partnerships with academic, legal, and community agencies to support career and financial security for graduating fellows

Success will be measured by:

- Stakeholder buy-in and financial support for the fellowship and fellows
- UTHealth, Texas Medical Board, and ACGME fellowship approval
- Prospective fellow interest and enrollment in the fellowship

- Enrolled fellows successfully meeting curricular, clinical, and practice milestones
- Scholarly products and publications resulting from the fellowship and fellows, including curricular and education tools for dissemination to other residency and fellowship programs
- Graduating fellows successfully finding employment upon graduation, with subsequent leadership in the field of elder capacity assessment and mistreatment.

Potential Impact: UTHealth is a national leader in elder capacity assessment and mistreatment research, clinical care, and education. Only three UTHealth physicians care for mistreated adult Texans, a sobering reminder of how fragile access to such care is. More physicians trained in these clinical skills are needed. This fellowship is the solution.

References:

- 1) Under the Radar: New York State Elder abuse prevalence study. Lifespan of Greater Rochester, Inc., Weill Cornell Medical Center of Cornell University New York City, and Department for the Aging; 2011 [cited 2023 Oct 1]. Available from: <http://www.ocfs.state.ny.us/reports/aps/Under-the-Radar-2011May12.pdf>
- 2) Dong X, Simon M, Mendes de Leon C, et al. Elder Self-neglect and Abuse and Mortality Risk in a Community-Dwelling Population. *JAMA*. 2009;302(5):517–526. doi:10.1001/jama.2009.1109
- 3) Get The Facts On Elder Abuse. The National Council on Aging; [cited 2023 Oct 1]. Available from: www.ncoa.org/article/get-the-facts-on-elder-abuse.

Leveraging Interactive Technology to Enhance Skills in Pediatric Pathology for General Pathologists

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Idea: Five online interactive workshops for general pathologists in developing countries to enhance diagnostic accuracy in pediatric cases

Need: There is a scarcity of pathologists globally with pediatric pathologists rare in some regions. In one premier Children's Hospital in Cambodia for example, there is no histopathology service or pathologists, let alone pediatric pathologists (1). In sub-Saharan Africa, pathologists are notably absent (2). In all of Africa there are just 1500 pathologists serving 1.34 billion people. By contrast, in the United Kingdom there are 1800 pathologists for a population of 66 million (3). Hence, in many parts of the world, general pathologists with no pediatric pathology training must work with pediatric specimens. Without sufficient exposure these pathologists may not be doing a just service to their patients. In the case of Africa, the situation is compounded by insufficient educational capacity (2).

The solution proposed is two-part: 1) In 2024 begin with 5 two-hour online interactive workshops focusing on diagnosis of challenging pediatric cancers and other diseases; and 2) Develop a one year online international training program to help build the specialty of Pediatric Pathology in the three target areas (Africa, the Caribbean and Latin America), with monthly half-day online sessions, each addressing a key area of Pediatric Pathology.

Methods: Phase1: In 2024 our team will develop and pilot a series of 5 two-hour online interactive workshops focusing on the diagnosis of important and challenging pediatric cancers and other serious diseases with a minimum of 20 participants from Africa, the Caribbean and Latin American.

Each two-hour session will incorporate a variety of methods: 1) an opener - teaser slide, case presentation or concept map. 2) several short 10-15 minute presentations to introduce key concepts, and 3) review of cases with learners working together in breakout rooms (in pairs or small groups) at each phase of the problem solving process. We will address germane features of the pathologic processes to include as pertinent: demographics, clinical presentation, radiographic findings, differential diagnosis, ancillary studies, molecular features, treatment and prognosis. We will be using digital pathology where actual clinical cases will be shared for discussion amongst learners. With digital slides the cases can be reviewed in a manner that replicates actual case review at the microscope. Digital pathology offers all the capabilities of a physical microscope and does not compromise detail.

At the end of each workshop, and the end of the program, the participants will complete an evaluation tool described below. After participation in the five workshops participants will also complete an online case-based examination to assess their diagnostic skills.

Evaluation Plan: The evaluation for Phase one, the five workshops, has four elements: 1) Accountability: We will track the development, implementation and attendance at the five workshops. 2) Reaction: Our post-activity survey will include items to assess quality of presentations and activities, how engaged the learners were in each session, and how well they felt they were able to integrate new learning into their jobs. 3) Learning: After participation in the five workshops participants will complete an online case-based assessment using digital pathology to assess their diagnostic skills. 4) Behavior: We cannot track behavior directly so to track indirectly we will use commitments to act, with follow ups on those commitments. Prior to workshops 2-5 participants will report their successes and challenges in applying the new information and diagnostic skills. We will also conduct a follow-up survey 3 months

after the final workshop to query them again on each topic to learn what additional training they feel is needed. These data will serve as part of the needs assessment for Phase 2; the online mini-residency in Pediatric Pathology.

Potential Impact: It is our intention that participation in the workshops will impact diagnostic skills and it is intended that the mini-residency in Pediatric Pathology will enhance medical diagnoses for sick children in Africa, the Caribbean and Latin America. Our project could also serve as a model for online training in other needed arenas of medicine.

References:

- 1) Hopp, Amanda M et al. It Takes a Village: Providing International Pediatric Pathology Services in a Resource-Limited Setting. American journal of clinical pathology, 2022, Vol.158 (1), p.81-95.
- 2) Fleming, Kenneth. Pathology and cancer in Africa. *ecancer* 2019, 13:945.
<https://doi.org/10.3332/ecancer.2019.945>
- 3) Mudenda, Victor; Malyangu, Evans; Sayed, Shahin , Fleming, Kenneth. Addressing the shortage of pathologists in Africa: Creation of a MMed Programme in Pathology in Zambia. *Afr J Lab Med.* 2020 Jun 3;9(1):974.

Addressing the need for post code debriefing and emotional well-being with Psychological First Aid.

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Idea: Addressing the need for debriefing post code experiences and supporting emotional well-being with a Psychological First Aid curriculum.

Need: Healthcare providers responding to constant emergencies such as responding to codes have been reported to be at higher risk of being emotionally and psychologically impacted by potential traumatic experiences (1, 2). It has often been found that unaddressed events of such distressing nature can lead to moral distress, dissatisfaction, burnout, and decreased productivity (2, 3) Data from a needs assessment conducted within our family medicine residency program demonstrated a perceived need for a curriculum to address the need for post code debriefing to assist in supporting the emotional well-being of our health care providers. To address the need and also meet ACGME core competencies, a psychological first aid program already proven effective in similar medical settings which focus on creating regular debriefing experiences, that help to mitigate emotional distress, promote a culture and an environment of support, and create a psychologically safe environment where individuals feel validated will be implemented (1,2).

Methods: PGY-1-3 Family Medicine residents (n = 24) and faculty (n = 23) will attend eight fifty minute large-group didactic sessions across the 2023-2024 academic year on Psychological First Aid (PFA), a program developed by the National Child Traumatic Stress Network and the National Center for PTSD. Psychological First Aid is a modular program designed to assist in reducing the initial distress caused by traumatic events and to foster short- and long-term adaptive functioning and coping (NCTSN, 2006). Residents and faculty will participate in on-site PFA training sessions that will include the eight core actions of PFA. The eight core actions are: 1. Contact and Engagement 2. Safety and Comfort 3. Stabilization (if needed) 4. Information Gathering: Current Needs and Concerns 5. Practical Assistance 6. Connection with Social Supports 7. Information on Coping 8. Linkage with Collaborative Services.

Learners will also engage in role playing experiences in small groups to gain practice on the implementation of the eight core actions of PFA.

By the end of the program, residents and faculty should be able to:

- 1) Understand the objectives of providing early assistance within days or weeks following an event.
- 2) Be flexible in their PFA approach and measure the amount of time they spend on each of the core action based on the specific needs and concerns of the individuals/group.

The goal is to increase understanding, engagement, and implementation.

Evaluation Plan: Residents and faculty will complete surveys at the end of each session and at the end of the program to evaluate content, perceived quality of instruction, relevance of activities to their practice, and level of confidence in implementing PFA post code experiences.

As a surrogate marker of program efficacy, residents will complete the Maslach Burnout Inventory (MBI) pre- and post-intervention.

There will be a six month follow up where residents and faculty will fill out surveys to evaluate ability to implement the approach in the current healthcare structure, the efficacy of the approach, their confidence level with being able to implement the approach, and their satisfaction with the approach.

Potential Impact: If successful, our PFA curriculum for post code events could be generalizable to all residency programs to help residents and faculty develop the practice of engaging in supportive

debriefing experiences that create a healthy culture where social emotional experiences after potentially traumatic events have a space to be addressed and supported.

References:

- 1) Brymer M, Jacobs A, Layne C, Pynoos R, Ruzek J, Steinberg A, Vernberg E, Watson P, (National Child Traumatic Stress Network and National Center for PTSD), Psychological First Aid: Field Operations Guide, 2nd Edition. July, 2006.
- 2) Przednowek T, Stacey C, Baird K, Nolan R, Kellar J, Corser WD. Implementation of a Rapid Post-Code Debrief Quality Improvement Project in a Community Emergency Department Setting. *Spartan Med Res J.* 2021 Apr 13;6(1):21376. doi: 10.51894/001c.21376. PMID: 33870002; PMCID: PMC8043908.
- 3) Wang L, Norman I, Xiao T, Li Y, Li X, Leamy M. Evaluating a Psychological First Aid Training Intervention (Preparing Me) to Support the Mental Health and Wellbeing of Chinese Healthcare Workers During Healthcare Emergencies: Protocol for a Randomized Controlled Feasibility Trial. *Front Psychiatry.* 2022 Jan 27;12:809679. doi: 10.3389/fpsy.2021.809679. PMID: 35153867; PMCID: PMC8830777.

Growing from Within: Mastering Self-Assessment and Feedback for Pediatric Residents

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Idea: Longitudinal workshop series delivered to pediatric residents as a way to mitigate low resident satisfaction scores with faculty-delivered feedback.

Need: Per the ACGME, it is mandated that faculty provide frequent, formative feedback to trainees AND that trainees take an active role in seeking feedback. Currently, CHLA residents' satisfaction with feedback is below the national average (52%, national average 74%). There are programs in place to teach best practice feedback approaches to faculty, but a focused curriculum on receiving and soliciting feedback at the resident level does not currently exist. Upon literature review, there is also little data on workshops dedicated to soliciting feedback at the resident level, but they have demonstrated effectiveness at the medical student education level. Teaching pediatric residents to receive and use feedback effectively can promote professional development by improving self-assessment, enhance resident satisfaction with feedback, and improve team dynamics.

Methods: This is a mixed methods study. CHLA Pediatric residents will attend a longitudinal workshop series on self-assessment, soliciting and receiving feedback with a growth mindset, and using that feedback for professional growth. Workshops will occur during regularly scheduled noon conference hours. The workshops include a combination of didactics and small group activities and discussions that will cover evidenced-based feedback models, strategies on soliciting feedback, character strengths that will help guide self-assessments, and growth mindset. Residents will receive coaching from the facilitator with the goal of developing confidence and competence at using feedback for personal growth. To identify key areas of knowledge gaps and resident attitudes of feedback, a needs assessment survey will be administered to residents prior to the start of the workshop series. At the beginning of each workshop, residents will reflect on their feedback received in the preceding months. To monitor the change in knowledge, skills, and attitudes regarding feedback, a survey will be administered following each workshop. The initial needs assessment survey will use Likert style questions and be administered again at the end. Surveys following each session will assess satisfaction and knowledge acquisition again using Likert style questions, multiple choice questions, and free response. Pre and post attendance answers will be matched using a unique identifier.

Evaluation Plan: Target Population: CHLA Residents

Stage of Program Development: The first workshop of the series was delivered during the 2022-2023 academic year. We plan to implement an additional two to three workshops (pending availability from the pediatric residency noon conference schedule) during the 2023-2024 academic year. The Needs Assessment was delivered to pediatric residents who attended the first workshop series. We plan to send to the 2023 intern class and to existing residents who did not attend the first session to collect additional data.

Timeline: The workshop series will be completed by the end of the 2023-2024 academic year. The data collected will be evaluated using the methods as stated above.

Potential Impact: Teaching pediatric residents to receive and use feedback effectively using a novel interactive workshop series, can promote professional development by improving self-assessment, enhance resident satisfaction with feedback, and improve team dynamics.

References:

- 1) Griffiths J, Schultz K, Han H, Dalgarno N. Feedback on feedback: a two-way street between residents and preceptors. *Can Med Educ J*. 2021 Feb 26;12(1):e32-e45. doi: 10.36834/cmej.69913. PMID: 33680229; PMCID: PMC7931483.

2) Mariani A, Schumann SA, Fromme HB, Zegarek M, Swearingen S, Ryan M, Reddy S. Asking for Feedback: Helping Learners Get the Feedback They Deserve. MedEdPORTAL. 2015;11:10228. https://secure-web.cisco.com/1fHRhXCd6R6UPQPfnkkvQI_aDYAQEVXzpt-2l4oQ29BMdH6PcFXOXQJvIO6b2Y0RWkrHb0Ywg6dpOc2gVuu8TIJwcwef9ldfHLfdVrHxOqOo70oHnDX-pZU9dO3_54ci_Vgo1m-lpAy0ukXnuaCT5tSGAKKfCcFByduNsGcUAqIYO_fmxi6Qsk4KQAp4kNiKtryuGgLz2S3c6FA4z41E7Xlg67J5Kqm9um0kep6yPLJ8Tayro5mon6Jk-GZiohbj1EI2JjrHiTqGEGivOwOrP6z1bXgww8xJHJ_z0MtPwVj-l_D8qPb9iBUJNhD6a1ND7EvDU5ZhNZP7nJvH9g3dL94_lkhL_N4a7wtcA41m9eyN61HXqGQwMoGvwiol1e82LYsAdKI8uLUSAqbUXDtG622_M-jOajDy-l29gWwNUYHXMM6A5CkshDRGDcOFhHAqyjhzlBGA6a5jAdgF8673Hg/https%3A%2F%2Fdoi.org%2F10.15766%2Fmep_2374-8265.10228

Preparing IM residents to care for Indigenous peoples: a co-produced DEI curriculum

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Idea: To partner with interprofessional members of Native American tribes to co-produce an Indigenous Health curriculum for our IM residency program.

Need: GME programs are responsible for ensuring trainees are equipped to provide equitable and culturally responsive patient care (1). However, people who belong to historically marginalized communities are underrepresented in medical workforces, which can result in a lack of understanding and awareness of the needs of these populations (2). Furthermore, GME faculty may not be content experts in caring for historically marginalized groups local to the program's community. Therefore, DEI-related curricular development often does not involve the voice of members of these minoritized groups, and DEI-related curricula may often only consist of rote online modules, preventing meaningful behavior change among learners or more inclusive and equitable culture change among training programs (2). One of the minoritized communities of focus at our institution are the Indigenous and Native American communities, who face significant healthcare disparities in our region (3), and who have strong leadership champions at our institution who identify as tribal members. No previous educational curricula on Indigenous health exists at our organization, and very limited curricula on Indigenous health exists in the U.S. medical education literature overall.

Methods: Our health system recently launched a People Resource Group (PRG), an inter-professional employee resource group to help promote advocacy and inclusion in the workplace (2), for Indigenous communities. We partnered with interested PRG members to co-produce Indigenous health curricula for our Internal Medicine residency program (n=23 residents), with the goal of improving our residents' ability to provide culturally responsive, equitable care for patients from Indigenous communities. We met with interested PRG members to develop learning needs and priorities in an iterative process. Using this information in conjunction with GME guideline-based competencies, we finalized learning goals and objectives. We also leveraged our organization's DEI collaborative to identify content experts outside of our institution to help deliver components of the curriculum. Our longitudinal, spaced curriculum will be delivered during the 2023-24 academic year and consists of 4 multimodal educational activities: 1. A didactic session on the history of Indigenous peoples in the US and how that has led to the health disparities faced by and health systems available to Native tribes today; 2. A moderated panel discussion with PRG members of Native tribes to hear stories of being a patient, family member, and advocate; 3 and 4. Two case-based small group sessions with a local content expert and PRG members on building trust and discussing end of life issues with Indigenous patients and families.

Evaluation Plan: To assess the extent to which the target population of IM residents are participating in the learning activity, we will report the number of IM residents who attend each educational session and calculate the percentage of IM residents who participated in the overall curriculum.

We will also evaluate our curriculum's impact on learner attitudes, knowledge, and self-efficacy in providing care for Indigenous communities via a pre-and-post learner survey. The survey was developed with input from literature review, GME educational team members, and a statistician. We hypothesize that learners will have an improved understanding of the social and historical factors as well as the health needs and concerns specific to local Indigenous communities.

Additionally, we will conduct semi-structured interviews with PRG members who participated in co-production of the curriculum. The interview guide was developed with input from literature review and GME educational team members with experience in qualitative research. We hope to learn about PRG members' experience with being involved in this project and whether it impacted their sense of belonging and inclusion within the organization.

Potential Impact: This curriculum could serve as a model on co-producing DEI curricula and incorporating interprofessional partnerships in the curricular development process to help build engagement among non-physician members of minoritized groups and ensure we, as educators, are teaching to the needs of these communities.

References:

- 1) Common Program Requirements (Residency). ACGME. September 2022.
<https://www.acgme.org/programs-and-institutions/programs/common-program-requirements/>
- 2) Stanford FC. The Importance of Diversity and Inclusion in the Healthcare Workforce. J Natl Med Assoc. 2020;112(3):247-249. doi:10.1016/j.jnma.2020.03.014
- 3) Arizona Department of Health Services and Maricopa County Department of Public Health. 2012 Maricopa County Community Health Snapshot, American Indian Adults.
<https://www.azdhs.gov/prevention/health-systems-development/health-disparities/index.php#publications-topics-data>

Enhancing Clinical Skills Proficiency Through Peer-Assisted Learning in Medical Education

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Problem Statement: Barriers in faculty-student teaching lead to learning gaps; peer-assisted learning can bridge these gaps.

Rationale: Medical and allied health education peer teaching, also known as peer-assisted learning (PAL), has been theorized to thrive on the concept of "cognitive congruence" (Yu et al. 2011). The theory suggests that peer teachers and their student counterparts possess a shared knowledge foundation and learning experience, which empowers peer teachers to effectively tailor communication to their learners' comprehension levels.

Medical education PAL has attracted attention due to its numerous documented qualitative advantages: substantial cognitive, psychomotor, and affective growth in participating students, as well as potential economic benefits and the promotion of collegial behavior (Secomb, 2008). In the United States, the significance of peer teaching and PAL has gained recognition. A survey conducted in 2010 revealed that a substantial 76% of medical schools incorporated medical students into various PAL roles throughout their curriculums (Soriano et al., 2010). (968 characters)

Methods: Six optional peer-led enrichment sessions were held prior to the 3 first-year Clinical Skills sessions during the first trimester of 2023 Human Body Foundations. Groups of 20-30 first-year students (M1s) joined 2 second-year students, who served as Clinical Skills Near-Peer Learning Coaches. Several groups of M1s and coaches met during each enrichment session.

During sessions one and two (Foundations 1), participants learned to collect a chief complaint and history of present illness, hand hygiene, draping, assess mental status, and measure vitals. Sessions three and four (Foundations 2) focused on collecting a medical and social history, draping, social determinants of health (SDOH), and note writing. Sessions five and six (Musculoskeletal/Dermatology) covered medical history, review of systems, joint inspection, muscle tone and strength evaluation, skin examination, and oral case presentation.

M1s completed a pre- and post-session survey to evaluate their comfort levels with various clinical skills. The post-survey also included questions about session conduction satisfaction. Pre- and post-session responses were matched via student identification numbers. Using a 4-point scale, with 0 being strongly disagree and 4 being strongly agree, statistical analyses were performed to determine if there was a difference in pre- and post-survey scores for each student. A paired t-test was performed and a $p < 0.05$ was used to determine if the results were statistically significant.

Results: Overall, students self-reported increased knowledge of all clinical skills. Participants demonstrated the highest increase (1.26 mean point increase, 95% CI 1.08-1.44) in Musculoskeletal/Dermatology (MSK/Derm), followed by Foundations 2 (1.14, 95% CI 0.93-1.36) and 1 (0.99, 95% CI 0.81-1.17).

In Foundations 1, students reported (N=95) the following increases in understanding: how to assess a patient's mental status (1.39, 95% CI 1.2-1.58), draping (1.19, 95% CI 0.98-1.4), measuring respiratory rate and heart rate (1.13, 95% CI 0.92-1.33), collecting a history of present illness (1.08, 95% CI 0.93-1.24), collecting a chief complaint (0.91, 95% CI 0.74-1.07), measuring blood pressure (0.87, 95% CI 0.67-1.08), and hand hygiene (0.37, 95% CI 0.23-0.5).

In Foundations 2, students reported (N=61) the following increases in understanding: how to assess for SDOH (2, 95% CI 1.75-2.25), note writing (1.3, 95% CI 1.05-1.54), collecting a social history (1.18, 95%

CI 0.97-1.39), collecting a medical history (0.85, 95% CI 0.63-1.08), and draping (0.39, 95% CI 0.24-0.55).

In MSK/Derm, students reported (N=71) the following increases in understanding: how to perform a skin exam (1.68, 95% CI 1.48-1.87), performing a joint exam (1.63, 95% CI 1.46-1.81), assessing for muscle tone and strength (1.62, 95% CI 1.43-1.81), collecting a review of systems (1.14, 95% CI 0.95-1.33), orally presenting a patient case (0.93, 95% CI 0.75-1.11), and collecting a medical history (0.58, 95% CI 0.42-0.73).

Potential Impact: Improved understanding of SDOH and clinical skills, particularly in MSK/Derm exams, was observed. These results suggest our peer-led clinical skills tutoring program's effectiveness. Future plans include expanding the initiative to accommodate more students due to the 25.22% average first-year participation and coaching capacity constraints.

References:

- 1) Secomb, J. (2008). A systematic review of peer teaching and learning in clinical education. *Journal of Clinical Nursing*, 17(6), 703-716. <https://doi.org/10.1111/j.1365-2702.2007.01954.x>.
- 2) Soriano, R. P., Blatt, B., Coplit, L., CichoskiKelly, E., Kosowicz, L., Newman, L., Pasquale, S. J., Pretorius, R., Rosen, J. M., Saks, N. S., Greenberg, L. (2010). Teaching Medical Students How to Teach: A National Survey of Students-as-Teachers Programs in U.S. Medical Schools. *Academic Medicine*, 85(11), 1725-1731. <https://doi.org/10.1097/ACM.0b013e3181f53273>.
- 3) Yu, T., Wilson, N. C., Singh, P. P., Lemanu, D. P., Hawken, S. J., Hill, A. G. (2011). Medical students-as-teachers: a systematic review of peer-assisted teaching during medical school. *Advances in Medical Education and Practice*, 2, 157-172. <https://doi.org/10.2147/AMEP.S14383>.

Field Ultrasound: An Interdisciplinary Approach to Bettering Patient-Care in the Prehospital Setting

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Idea: Medical Students Teach Point of Care Ultrasound (POCUS) to Paramedics to Supplement Prehospital Patient Care

Need: POCUS improves patient care and patient outcomes. Often, patient care begins in a prehospital setting. The quality of care in prehospital settings impacts patient outcomes and experience. Local fire departments in the Salt Lake City area have obtained Butterfly Ultrasounds which can be used in the field for rapid assessment and care prior to and during transport to higher level care facilities. Salt Lake City Fire Department and South Jordan Fire Department have expressed interest to Dr. Cotton for additional training in POCUS for their Critical Care Paramedics, who recently acquired Butterfly Ultrasound's.

Methods: The University of Utah School of Medicine (UUSOM) is one of five medical schools in the nation with an ultrasound (US) curriculum, under the direction of Dr. Jennifer Cotton, an Emergency US fellow and Emergency Medicine physician. To amplify UUSOM students' learning and to foster an interdisciplinary relationship with local paramedics, medical students within the US Honors Program will create an US curriculum consisting of a Rise Articulate module series and in-person skills workshops. The modules will contain the following objectives: (1) US vocabulary, (2) US guided IV placement and (3) Pulmonary exam. They will be completed virtually by paramedics and contain self-assessments to guide learning. The workshops will cover hands-on POCUS guided IV placement and pulmonary exam skills. A pass-off session will initially be completed by the critical care paramedics with Dr. Cotton, or other qualified POCUS physician, in which observation of US guided IV-placement and lung exam will take place. This paramedic will be appointed the "POCUS paramedic" and will complete future pass-offs with other paramedics at the department.

Evaluation Plan: To evaluate the US program, participants will submit scans obtained in a non-hospital setting for review to ensure retention of skills. Images will be reviewed by the US directors and feedback will be given. Additional instruction, workshops and review of skills may be provided if deemed necessary for continuing improvement. A written assessment will be provided to assess retention of knowledge and skill in identifying relevant artifacts that may appear during POCUS. Learning attendance, module completion, pass-off, and frequency of POCUS use will be documented in a spreadsheet. To assess the effectiveness of paramedic learning, a bi-annual survey asking paramedics to evaluate how these US skills have improved their ability to provide care and how frequently POCUS is being utilized in the field will be sent to the departments. Discussions will occur regularly between the POCUS paramedic and the US trained physician to adjust the program's training to meet the needs of paramedics and assess efficacy in the field.

Potential Impact: It has been shown that POCUS can be used to help diagnose life threatening conditions. With proper training providers will be able to maximize the utilization of POCUS to stabilize and begin effective treatment during transport to the hospital.

References:

- 1) Donovan JK, Burton SO, Jones SL, Meadley BN. Use of Point-of-Care Ultrasound by Non-Physicians to Assess Respiratory Distress in the Out-of-Hospital Environment: A Scoping Review. *Prehosp Disaster Med.* 2022 Aug;37(4):520-528. doi: 10.1017/S1049023X22000711. Epub 2022 May 4. PMID: 35506171; PMCID: PMC9280071.

- 2) Amaral CB, Ralston DC, Becker TK. Prehospital point-of-care ultrasound: A transformative technology. *SAGE Open Med.* 2020 Jul 26;8:2050312120932706. doi: 10.1177/2050312120932706. PMID: 32782792; PMCID: PMC7383635.
- 3) Dessie AS, Calhoun AW, Kanjanaptom P, Gilbert GE, Ekpenyong A, Lewiss RE, Rabiner JE, Tsze DS, Kessler DO. Development and Validation of a Point-of-Care-Ultrasound Image Quality Assessment Tool: The POCUS IQ Scale. *J Ultrasound Med.* 2023 Jan;42(1):135-145. doi: 10.1002/jum.16095. Epub 2022 Sep 27. PMID: 36165271.

A Focused Simulation Curriculum for Emergency Medicine Residents

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Idea: The Design of a Survey-Based, Focused Simulation Curriculum for Emergency Medicine Residents

Need: Simulation training enhances emergency medicine resident education by providing exposure to the spectrum of pathology and procedures while honing communication and team building skills (1). There is currently a lack of research into the specific simulation needs based on learner level or post-graduate year (PGY). The simulation curriculum at our institution currently uses SIM cases that are either not PGY level specific or are based on instructor presumed applicability to PGY level learners. There is also minimal coordination between didactic and simulation sessions to ensure topic synchrony. Our goal is to identify gaps in our current simulation content and to best align simulation curricular content with the needs of PGY level learners using a need assessment survey. We then plan on analyzing that survey data and implementing a new simulation curriculum that is learner level specific based on our survey responses.

Methods: ABEM list of topics was assessed using a modified Delphi technique. Clinical conditions and procedures were eliminated from the ABEM model and a final survey was sent to all residents (our program is three years with PGY-1, 2, and 3 levels) as well as faculty involved in resident didactics. Topics were ranked on a Likert scale from very unimportant (1) to very important (5). This data will be evaluated to identify gaps in our current simulation curriculum. We will also identify topics that are best suited for the early PGY1, as well as topics that are more appropriate for the transitioning PGY2 and PGY3 level learner. The results will then be used to create a simulation curriculum for intern learning. This is occurring at Temple University Hospital. Timeline will be to implement the new curriculum for interns starting in July 2024.

Evaluation Plan: Our data will be utilized to identify topics deemed important or very important (score 4-5) on the Likert scale. Survey data will also be utilized to build appropriate simulation content to cover early in the academic year and the end of the year as residents transition to the next PGY level. This data will be gleaned from all participants and interpreted specifically for discrepancies between residents and faculty. We will compare this data with the current simulation curriculum to prioritize topics deemed as important or very important and reframe or exclude less important topics from the curriculum altogether. We will also strategically place conditions and procedures at the beginning of the year based on the feedback that we get in the survey. We will re-survey this group to evaluate for areas of strength and weakness in the curriculum. This curriculum will work in tandem with our intern didactic curriculum, which was also constructed using survey-generated data about topic importance to the intern learner. (2). Together, this will enhance the intern learning experience to allow them to be more competent and comfortable with both content and procedures in the emergency department earlier on in residency.

Potential Impact: To our knowledge this will be the first simulation curriculum design based on a needs assessment. This could provide a curriculum for other emergency medicine programs to implement to adequately target and challenge specific PGY learner levels.

References:

- 1) Hamstra S, Philibert I. Simulation in graduate medical education: understanding uses and maximizing benefits. *J Grad Med Educ.* 2012 Dec;4(4):539-40. doi: 10.4300/JGME-D-12-00260.1. PMID: 24294437; PMCID: PMC3546589.
- 2) Davis D, Warrington SJ. Simulation Training and Skill Assessment in Emergency Medicine. [Updated 2022 May 8]. In: StatPearls [Internet]. Treasure Island (FL): StatPearls Publishing; 2023 Jan-. Available from: <https://www.ncbi.nlm.nih.gov/books/NBK557695/>

Incorporation of a First Responder Curriculum into a Medical School Transition to Residency Course

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Problem Statement: Incorporating a first responder curriculum during a transition to residency (TTR) course to prepare incoming interns to manage medical emergencies.

Rationale: The transition from fourth-year medical student to first-year resident presents a host of challenges. Among these is developing the skills and knowledge required to respond to emergency situations both within and outside of medical settings. Though most hospitals have implemented rapid response teams, withholding care while awaiting arrival of these teams may delay initiation of time-sensitive life-saving interventions (i.e. jaw thrust, CPR). At many medical schools, emergency medicine is not a required course, and student experience in responding to medical emergencies can be limited to basic CPR certification. Even among students who have had formal exposure to emergency medicine, experience primarily managing critically ill patients is limited. We developed a simulation-based curriculum during our TTR course to equip fourth-year medical students with the knowledge and skills required to stabilize and treat patients during commonly encountered medical emergencies.

Methods: At our medical school, all medical students are required to attend a four-week Transition to Residency course during March-April of their fourth year. During the 2022-2023 academic year, all 166 students were enrolled in a 3-hour First Responder course led by Emergency Medicine faculty and residents. The course was offered on four consecutive Thursday mornings, with a quarter of the class attending each session. Each Thursday session consisted of a brief presentation followed by low fidelity simulation cases. Students were divided into groups of 4-5 and rotated through five simulated emergencies, including respiratory distress, acutely altered level of consciousness, and seizure. Instructors were provided with a critical actions checklist and low fidelity manikins, cardiac monitors, defibrillators and airway adjuncts to enhance the fidelity of each scenario. For each station, a different student would assume the role of team leader while the remainder of students practiced hands-on skills. Critical actions included calling for help, starting chest compressions, requesting point-of-care testing and administering appropriate medications. At the conclusion of each simulation the instructors provided feedback to students and reviewed all critical actions and pertinent procedures.

Results: After the 2022-2023 iteration of the course, 88 fourth-year medical students completed an anonymous end-of-course survey and were asked if they would recommend the content and instructors of the first responder sessions for next year. A majority of students chose to “strongly agree” or “agree” with these statements, (94% and 92%, respectively) with only a minority choosing “strongly disagree” or “disagree” (6% and 8%, respectively). The free text section of the survey highlighted students' preferences for simulations over lectures and their appreciation for the practical skills they learned (“preferred simulations over lectures”, “it was helpful to have hands-on practice”). Students also indicated a desire for further inclusion of similar sessions in their medical school curriculum as well as subsequent TTR courses (“I wish we had done more of this earlier in med school”, “wish we did more of this during TTR over other sessions!”). For the upcoming iteration of the course, we plan to develop a more rigorous plan of evaluation aimed at exploring the impact of the course on perceived comfort of responding to emergencies and reactions to specific elements of the course. We plan to accomplish this by including a robust post-session survey and post-TTR student focus groups. Additionally, we plan to add simulated cases at the end of the course to gauge performance on the critical actions checklists before and after attending the first responder session.

Potential Impact: We successfully incorporated a well-received first responder class for fourth-year medical students during their TTR course. This innovation serves as a model for better preparing

graduating medical students with the skills and knowledge to respond to medical emergencies and initiate time-sensitive and potentially life-saving interventions.

References:

- 1) Bell SG, Kobernik EK, Burk-Rafel J, Hughes DT, Schiller J, Heidemann LA, Morgan HK. Trainees' Perceptions of the Transition From Medical School to Residency. *J Grad Med Educ.* 2020 Oct;12(5):611-614. doi: 10.4300/JGME-D-20-00183.1. PMID: 33149831; PMCID: PMC7594769.
- 2) Chang LY, Eliasz KL, Cacciatore DT, Winkel AF. The Transition From Medical Student to Resident: A Qualitative Study of New Residents' Perspectives. *Acad Med.* 2020 Sep;95(9):1421-1427. doi: 10.1097/ACM.0000000000003474. PMID: 32349016.
- 3) Perez AR, Boscardin CK, Pardo M. Residents' Challenges in Transitioning to Residency and Recommended Strategies for Improvement. *J Educ Perioper Med.* 2022 Jan 1;24(1):E679. doi: 10.46374/volxxiv_issue1_boscardin. PMID: 35707017; PMCID: PMC9176399.

Team Based Communication Simulation Improves Cardiac Arrest Care in the Emergency Department

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Idea: To create a team-based simulation session teaching interprofessional communication skills to medical staff who participate in cardiac arrest care.

Need: Professionals who manage in-hospital cardiac arrest, whether on internal medicine or emergency medicine teams, often critique communication between team members. Additionally, on a national need's evaluation, factors that improved outcomes in such cases included better communication, debriefing, and institutional reviews [1]. These features are actively demonstrated at top performing hospitals on cardiac arrest care with the addition of leadership and delegation of clear roles [2].

Incorporating these elements into patient care challenges didactic teaching alone. Simulation effectively models and practices team-based communication, identifies latent safety threats, and enhances residency programs' quality control. In fact, many institutions have implemented interprofessional "mock codes" and have demonstrated improved team performance. To date there has been no curriculum implemented past "mock codes," and there are limited data evaluating patient centered outcomes following the implementation of these methods [3].

Developing a simulation workshop addressing procedural, intellectual, and interprofessional communication aspects is essential for healthcare professional training and may improve patient outcomes.

Methods: This intervention will be conducted with medical personnel involved in the care of patients in cardiac arrest including: registered nurses, patient care technicians, physicians, pharmacists, and respiratory therapists. Participants will engage in a four-hour workshop designed to teach team-based communication in cardiac arrest care. Learning objectives will include demonstrating closed loop communication and the practice of decisive delegation. Hour one will include a didactic session discussing the key components to closed loop communication and reviewing example videos for reference. The didactic session will conclude with a 30-minute practice session in pairs with facilitator feedback followed by a 15-minute break.

The latter three hours will be two recorded simulation sessions. Each will last 60 minutes with a 15-minute break. The first will be a standard "mock code" where participants will apply communication skills in a 20-minute simulation. A 20-minute de-brief will follow, reviewing prior learning points to incorporate spaced repetition. Finally, there will be a 20-minute video review to connect the discussion to the performance. The second session will be a difficult patient encounter with an implanted team member demonstrating poor communication. This session will test the learner's ability to redirect and take control of the situation. The advancing stations are designed to create an expedited step wise application-based practice from novice to advanced.

Evaluation Plan: Accountability: We will track the number of sessions performed and participants involved. Reaction: A questionnaire will be given, including a confidence assessment survey administered before and after the session assessing comfortability of participants with their role in a cardiac arrest, as well as their opinion on the current state of communication. Also in this survey will be a Likert scale asking participants about enjoyability. There will be space for narrative reflection and feedback as well, requesting general thoughts and comments on the intervention, including how it can be improved and what went well. Learning: A multiple-choice questionnaire on communication skills will be performed before and after the intervention. The narrative reflection and feedback will also provide useful information on participants learning during the session. Behavior: Following the intervention, patient data will be tracked for patients that arrive in the emergency department in cardiac arrest six months pre and post intervention. Video review will evaluate complications related to poor communication including

medication error, occupational exposures, and procedural complications and both arms will be compared.

Potential Impact: This may have a significant impact on the outcomes of critically ill patients and identify latent safety threats within the institution. Additionally, this will have an impact on the patient care team's attitude, confidence, and competence in managing critically ill patients. Collectively this will have a global and institutional impact.

References:

- 1) Anderson TM, Secrest K, Krein SL, Schildhouse R, Guetterman TC, Harrod M, Trumpower B, Kronick SL, Pribble J, Chan PS, Nallamotheu BK. Best Practices for Education and Training of Resuscitation Teams for In-Hospital Cardiac Arrest. *Circ Cardiovasc Qual Outcomes*. 2021 Dec;14(12):e008587. doi: 10.1161/CIRCOUTCOMES.121.008587. Epub 2021 Nov 15. PMID: 34779653; PMCID: PMC8759032.
- 2) Nallamotheu BK, Guetterman TC, Harrod M, Kellenberg JE, Lehrich JL, Kronick SL, Krein SL, Iwashyna TJ, Saint S, Chan PS. How Do Resuscitation Teams at Top-Performing Hospitals for In-Hospital Cardiac Arrest Succeed? A Qualitative Study. *Circulation*. 2018 Jul 10;138(2):154-163. doi: 10.1161/CIRCULATIONAHA.118.033674. PMID: 29986959; PMCID: PMC6245659.
- 3) Hazwani TR, Alosaimi A, Almutairi M, Shaheen N, Al Hassan Z, Antar M. The Impact of Mock Code Simulation on the Resuscitation Practice and Patient Outcome for Children With Cardiopulmonary Arrest. *Cureus*. 2020 Jul 15;12(7):e9197. doi: 10.7759/cureus.9197. PMID: 32789097; PMCID: PMC7417123.

A Cost-Effective, Time-Efficient Model: In-Situ Mirror Simulation in the Medical Intensive Care Unit

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Problem Statement: Traditional in situ simulation provides many benefits to learners but may be time and resource intensive for both learners and educators.

Rationale: We determined that mirroring the clinical condition of existing patients on the medical intensive care unit (ICU) unit would yield benefits in the time and cost domains. Our in-situ mirror simulation program sought to provide continued cardiac arrest leadership training for learners on rotation in the medical ICU, without exhausting valuable patient care time or becoming too costly to maintain. We implemented mirrored patient data of an existing patient on the unit to ensure that the simulation activity remained expeditious and provided an actively relevant clinical context for learners. Our mirrored approach aimed to save time for educators by utilizing existing patient vital signs, imaging, lab work and medications, without requiring invention of these. This same approach aimed to obviate the need for introducing the simulation with a clinical vignette for learners, who were already aware of their mirrored patient's data in working memory.

Methods: A total of 18 mirror simulations were conducted in vacant medical ICU patient rooms between July 2022 and October 2023. Patients deemed at risk for cardiac arrest according to the H's and T's of ACLS were chosen as the basis for cardiac arrest simulation. Clinical history and data from these ICU patients were mirrored into each simulation. Additionally, the patient's tubes, lines, drains, intravenous medication bags and airway device were mirrored onto the mannequin. The iSimulate ALSi software was used to display vitals and ECG data for four distinct simulated cardiac arrest scenarios. Resident learners executed ACLS resuscitation protocols for either shockable or non-shockable rhythms, with the simulation ending when a pulse or electrical activity was restored. Participant feedback from team leaders was collected via surveys administered after each simulation, while participant attitudes pertaining to technical and non-technical resuscitation skills were surveyed before and after the simulation.

Results: This in situ mirror simulation model is novel, expanding a traditional simulation activity to function within the ICU itself, where resident learners would be expected to perform. The program proved to be cost-effective, as most simulation equipment could be recycled between sessions. From setup, including patient selection and room configuration, to take-down, running a simulation took on average 2 hours for instructors, and less than 1 hour for participating learners. 100% of learners (n = 18) found the activity educational. Participants rated the average benefit a 3.77 out of 5, and rated the activity as a 3.94 out of 5 with respect to maintenance of attention and interest. Positive narrative feedback included appreciation for the mirrored patient concept (n = 7), for the chance to practice (n = 8) and specifically for the logistics of a sudden, mirrored in situ simulation (n = 3).

Potential Impact: In situ mirror simulation provides the expected benefits in the time and cost domains, as judged by qualitative feedback and ability to sustain the program. To run a successful in situ mirror simulation program, careful coordination with unit staff is required to ensure available space and noninterference with patient care responsibilities.

References:

- 1) Harwayne-Gidansky I, Culver K, Cavanaugh S, Panesar R. Using Mirror Patients to Enhance Patient Safety. *Simulation in Healthcare*. 2019;14(3):195-200. doi:10.1097/sih.0000000000000348
- 2) Kneebone RL, Scott W, Darzi A, Horrocks M. Simulation and clinical practice: strengthening the relationship. *Med Educ*. Oct 2004;38(10):1095-102. doi:10.1111/j.1365-2929.2004.01959.x

- 3) Andreatta P, Saxton E, Thompson M, Annich G. Simulation-based mock codes significantly correlate with improved pediatric patient cardiopulmonary arrest survival rates. *Pediatr Crit Care Med*. Jan 2011;12(1):33-8. doi:10.1097/PCC.0b013e3181e89270

Sim Battle: Competition for Teaching Ultrasound-Guided IV Placement to Preclinical Medical Students

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Idea: We plan to host sessions teaching ultrasound-guided IV access culminating in a competition between teams of first and second-year medical students.

Need: Gamification has been employed in the graduate medical education setting to increase engagement and enhance the buy-in for learners but has been employed less often in undergraduate medical education. We identified teaching placement of ultrasound-guided intravenous (IV) access to give students more hands-on experience with ultrasound early in medical school, and to gain confidence in their ability to perform a clinically useful skill prior to clerkship years. We hypothesize that introducing an element of competition between teams of first and second-year medical students will engage learner's motivation to master the skill through enhancing the buy-in for participants and introducing camaraderie between first and second-year medical students.

Methods: Participants will include 24 first and second-year medical students per session, split into teams of 12 students. An introductory lecture, practice time and the competition will all take place within procedural training rooms in a medical school simulation center. The goal is to assess participant's confidence with basic ultrasound skills and with placing ultrasound-guided IVs.

Prior to the activity, participants will complete a pre-survey assessing their confidence in placing ultrasound-guided IV placement using a 5-point Likert scale. To control for prior training, participants will be asked to report their prior experience with peripheral IV or ultrasound-guided IV placement. Sessions will consist of a fifteen-minute introductory lecture, a thirty-minute hands-on session to learn from instructors, then a fifteen-minute relay race to place ultrasound-guided IVs accurately and quickly. Finally, participants will complete an identical post-survey assessing their confidence in the same skills. Necessary equipment will include two Blue Phantom IV trainers and two ultrasound machines with vascular probes.

Evaluation Plan: We will administer a pre and post-survey including a course evaluation and will collect information related to participant confidence before and after the session. Statistical analysis will be done on the survey data to assess for significant changes in confidence. Paired data collected from the surveys will be analyzed for significant changes in confidence related to IV placement, ultrasound-guided IV placement and ultrasound knowledge using a Wilcoxon matched-pairs signed-rank test. Mean confidence ratings between the winning and losing team will be compared to assess for an impact in procedural confidence introduced by the competition intervention. Qualitative data collected through the survey tool will be compiled to understand the best received aspects of the simulation competition intervention or any suggestions made to improve it.

Potential Impact: Our intervention will attempt to institute an annual tradition at our medical school between first and second-year students, thereby making our academic community more connected and vibrant. It will also attempt to introduce gamification into undergraduate medical education, the use of which is less established than in graduate medical education.

References:

1) Albers, S., et al., A contest without losers ? The value of extracurricular simulation competition in undergraduate medical education [version 1]. MedEdPublish, 2020. 9(201).

2) Pajor, M., N. Xie, and G. Podolej, Medical student education simulation competitions. *The Clinical Teacher*, 2023. 20(1): p. e13547.

Boosting Retention Through Reminders: Maintaining Fast Scan Proficiency After Ultrasound Training

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Idea: Examine whether phone app reminders improve long-term retention of FAST scan skills in emergency medicine residents after an ultrasound rotation.

Need: FAST (Focused Assessment with Sonography for Trauma) scans are effective methods for detecting free fluid in the abdomen and pericardium. For emergency medicine (EM) residents, it is an essential skill for diagnosing trauma, intra-abdominal hemorrhage, and pericardial effusion in the emergency department (ED) (1). The FAST scan skill is relatively simple to learn, but competency retention can be challenging over time. Research reveals a significant decline in scanning abilities six months after training. A number of factors may be responsible for this, including lack of practice, forgetting key steps, and difficulty interpreting ultrasound images. Despite the need for regular reinforcement, residents' load is often too high. Reminder apps have been shown to improve skill retention. A simple reminder system may help residents maintain FAST scan proficiency after focused training (3). We will examine the effectiveness of using a reminder app to improve FAST scan competency retention in emergency medicine residents.

Methods: This study will be a randomized controlled trial of EM residents. We will enroll residents who have completed a four-week ultrasound rotation. Participants will be randomized to a reminder group receiving weekly FAST scan prompts via a phone app like ClickUp versus controls with no prompts after the rotation. In the ED, the reminder group must complete at least one FAST scan a week for the next 6 months. The control group will not receive any reminders. Residents in both groups will undergo an observed structured clinical exam (OSCE) with a simulator. The OSCE will assess their ability to acquire optimal FAST scan images, as well as their ability to accurately interpret the images. Up to three faculty raters blinded to the residents' group assignments will independently evaluate their performance using validated rating checklists. The residents will complete the same OSCE scenario again after six months. The faculty raters, remaining blinded to group allocation, will assess their FAST scan image acquisition technique and interpretation skills. The raters' scores will allow quantitative comparison of skill retention between the initial OSCE and at the 6-month follow-up mark. In addition, the residents will complete anonymous surveys at both time points rating their own self-perceived comfort level in obtaining and interpreting FAST scan images. The surveys will help determine changes in their confidence performing FAST scans.

Evaluation Plan: Using a two-way repeated measures ANOVA, OSCE scores rated by blinded faculty at two time points will be analyzed (post-training and 6 months after training). This will allow quantitative comparison of changes in FAST scan proficiency over time between the reminder and control groups. We hypothesize that the group receiving weekly FAST scan prompt reminders via the phone app will exhibit smaller declines in skills at the six-month mark compared to controls who do not receive reminders. Additionally, the residents' self-evaluation surveys rating their confidence in obtaining and interpreting FAST scans will be analyzed using rank tests. This test will determine if there are significant changes in their self-perceived skill comfort from post-training compared to the six-month follow-up. We expect that residents in the reminder group will report greater retained confidence and comfort levels compared to controls at 6 months. Qualitative data will also be collected via interviews and open-ended survey questions to assess the feasibility of integrating the app-based reminders into regular ED practice. Feedback will identify benefits and barriers to using the prompts, which can guide implementation if effective.

Potential Impact: This study will evaluate a simple, sustainable strategy to reinforce FAST scan skills after an ultrasound rotation. If effective, app reminders prompting regular scanning could mitigate competency decay, enhancing patient care and education.

References:

- 1) Ota K, Oba K, Ito Y, Cheng J, Ota K, Takasu A. Focused Assessment with Sonography for Trauma (FAST) training for first-year resident physicians at a university hospital in Japan: A longitudinal, observational study. *SAGE Open Medicine*. 2021;9. doi:10.1177/20503121211044367
- 2) Hadas KD, Ehud R, Dania T, Hadas Y, Nir F, et al. (2020) Long Term Retention of FAST (Focused Assessment with Sonography for Trauma) Skills and Knowledge after a Short Training Program. *Adv Pediatr Neonatol care: APNC-112*. DOI: 10.29011/APNC-112.100012
- 3) Ahn JY, Cho GC, Shon YD, Park SM, Kang KH. Effect of a reminder video using a mobile phone on the retention of CPR and AED skills in lay responders. *Resuscitation*. 2011;82(12):1543-1547.

Enhancing Diagnostic Proficiency: Online and Hands-On Optic Sheath Ultrasound Training

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Idea: Interactive optic sheath ultrasound training for medical students and residents improves diagnostic accuracy and patient care.

Need: Bedside optic nerve sheath diameter (ONSD) measurement via ultrasound is a non-invasive method emerging as an effective means to assess intracranial pressure in patients with neurological conditions. Notably, ONSD measurement is valuable in clinical situations such as head trauma and the management of increased intracranial pressure. However, it is essential to perform this procedure correctly to ensure patient comfort and accuracy (1-2).

The current methods for educating medical students and residents in ONSD ultrasound lack uniformity and fail to meet the demand for comprehensive training. Moreover, options for training beyond hands-on patient practice are limited. Therefore, there is a clear need for a focused training approach. The integration of simulation into the curriculum offers a safe and controlled environment for deliberate skills practice, mitigating potential risks (3). The development of a comprehensive simulation-based curriculum for ONSD ultrasound addresses a significant training gap, benefiting both medical students and residents.

Methods: Our goal is to create a comprehensive training program for optic sheath ultrasound, targeting medical students and residents. This program will consist of two essential components: online interactive modules and hands-on training workshops. The online modules will cover the fundamentals of optic sheath ultrasound, encompassing topics such as anatomy, scanning techniques, image interpretation, and clinical applications. To enhance engagement, these modules will incorporate multimedia elements, real-world case studies, and interactive quizzes, allowing for self-paced learning. Learners will have continuous access to these online modules throughout the six-week program. In addition to online learning, participants will engage in hands-on workshops led by experienced faculty members. These workshops will provide a practical opportunity for learners to perform optic sheath ultrasound on simulation models under expert supervision, ensuring immediate feedback and guidance. The workshops will take place in a clinical setting equipped with ultrasound equipment and staffed by experienced instructors. This combined approach of online and hands-on learning, along with interactive elements, ensures that medical students and residents develop the necessary skills and confidence in optic sheath ultrasound, ultimately improving their diagnostic accuracy and patient care.

Evaluation Plan: To assess the effectiveness of our training program, multiple evaluation methods will be employed. Initially, learners will undergo pre-training assessments to gauge their baseline knowledge and confidence in optic sheath ultrasound. Subsequently, post-training assessments will be administered to measure knowledge acquisition and skills improvement. During the hands-on workshops, learners will receive direct observation of their ultrasound scanning skills, with trained evaluators assessing their ability to acquire high-quality images and make accurate measurements of the optic nerve sheath diameter. In addition to skills evaluation, online quizzes and case-based assessments will be utilized to evaluate learners' comprehension of optic sheath ultrasound principles and clinical applications. Furthermore, participants will play an active role in providing valuable feedback regarding the quality and effectiveness of the training program, encompassing both the online modules and hands-on workshops. These comprehensive evaluation methods will ensure that learners not only acquire essential skills but also gain a deep understanding of optic sheath ultrasound, enhancing their diagnostic proficiency and patient care.

Potential Impact: Optic sheath ultrasound training bridges the education gap, ensuring medical students and residents acquire essential patient care skills. Enhanced proficiency in this diagnostic modality will

lead to improved patient outcomes. Ultimately, this project has the potential to set a new standard for teaching optic sheath ultrasound in medical education

References:

- 1) Tayal VS, Neulander M, Norton HJ, Foster T, Saunders T, Blaivas M. Emergency department sonographic measurement of optic nerve sheath diameter to detect findings of increased intracranial pressure in adult head injury patients. *Ann Emerg Med.* 2007;49(4):508-14.
- 2) Soldatos T, Karakitsos D, Chatzimichail K, Papathanasiou M, Gouliamos A, Karabinis A. Optic nerve sonography in the diagnostic evaluation of adult brain injury. *Crit Care.* 2008;12(3):R67.
- 3) Al-Elq AH. Simulation-based medical teaching and learning. *J Fam Community Med.* 2010 Jan;17(1):35-40. doi: 10.4103/1319-1683.68787.

An Interactive Curriculum to Enhance the Dialogue Between Pathology and Surgery

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Problem Statement: Miscommunications between surgeons and pathologists can lead to specimen misdiagnosis, no diagnosis, and need to repeat procedures.

Rationale: The miscommunication between surgeons and pathologists, as well as errors in specimen handling, can have significant consequences for patient safety and the quality of care. Diagnostic errors may lead to inappropriate treatments, delays in treatment, or the need for additional procedures, all of which can harm patients. Effective collaboration between surgical and pathology teams is vital for accurate diagnoses and optimal patient outcomes. Assessing and enhancing communication and collaboration skills among medical trainees is essential to prepare them for successful interdisciplinary practice. Medical education programs must continuously assess the effectiveness of their curricula in preparing learners for real-world clinical scenarios. This project's focus on adapting and evaluating the curriculum aligns with the broader goal of ensuring that educational interventions meet the specific needs of learners and healthcare systems.

Methods: The integration of simulation-based learning, including virtual reality and 3D organ simulations, is a promising approach to enhancing technical and nontechnical skills in medical education. Assessing the impact of such innovative teaching methods contributes to the advancement of pedagogical practices in medical training. The methodology involves a comprehensive approach that includes curriculum adaptation, implementation, and rigorous evaluation. The study design includes:

- Population: PGY-2 and PGY-3 surgical trainees at our institution.
- Instruments/Techniques: Pre- and post-tests, surveys, and data collection on patient specimen errors to align the goals with improved patient outcomes.
- Validity Evidence: Instruments will be developed based on established competencies, reviewed by experts, and pilot-tested for validity.

There is no question that effort in a multipronged approach will be needed to enhance specimen safety overall. An interactive method of teaching the trainees involves simulation-based learning and assessment. Using validated assessment tools can ensure the accuracy and reliability of evaluating technical and nontechnical skills, as well as health care systems navigation through intended VR and 3D simulations. By incorporating simulation-based scenarios that focus on delivering pathology results to patients in an understandable manner, the curriculum can enhance the surgeon's ability to navigate health care systems

Results: A post-course knowledge elicitation questionnaire performed at a previous institution demonstrated that participants had increased pathology knowledge after exposure to the curriculum. All participants indicated that the course "allowed me to acquire and practice clinical knowledge" and "was a valuable use of my time and fits well into my overall education conference". All participants rated the course, facilitators, and teaching simulation resources as "very good" or "excellent". The curriculum does not require significant resources and was well received by surgical trainees, a group with limited availability. In dissemination phase, the project anticipates improved patient safety, reduced specimen errors, enhanced multidisciplinary collaboration, and increased DEI in medical education.

One of the most common errors is due to mislabeling of specimen. Collaborations between various healthcare teams can eliminate mislabeled laboratory specimen. Specimen safety workforces are a great way for open the interdepartmental lines of communication to ensure accurate specimen labeling and prevent errors. At UCLA, although the focus of this project will be a Pathology for Surgeons curriculum, there will be and has been effort made to provide operating room nurses with in-service teachings on specimen error and proper specimen submission. The OR nursing feedback has been positive and indicates usefulness of the curriculum.

Potential Impact: Valuable insights into improving specimen collection process, enhancing communication, and reducing patient specimen errors are found in the literature. However, there is no one curriculum currently named as a studied intervention to enhance specimen safety.

References:

- 1) D'Angelo R, Mejabi O. Getting it right for patient safety: specimen collection process improvement from operating room to pathology. *Am J Clin Pathol.* 2016;146(1):8-17.
- 2) Steelman VM, Williams TL, Szekendi MK, Halverson AL, Dintzis SM, Pavkovic S. Surgical specimen management: a descriptive study of 648 adverse events and near misses. *Arch Pathol Lab Med.* 2016;140(12):1390-1396.
- 3) Tampi C. Pathology for the HPB Surgeon. *Indian J Surg.* 2012;74:67-72.

Enhancing Specialty-Specific Education During a Transition to Residency (TTR) Course

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Idea: Utilizing GME-driven development and facilitation of specialty-specific tracks during a TTR course.

Need: Transition to Residency (TTR) courses have become more ubiquitous in medical school education, with 119 schools offering a course in the 2021-2022 academic year (1). While many TTR courses include general content regardless of student specialty, the AAMC and the Coalition for Physician Accountability recommend that courses offer specialty-specific content to improve preparedness for residency training (2). A local needs assessment conducted on the Keck Medical School Class of 2023 suggested that students also desire a more specialty geared curriculum. However, from a course developer standpoint, there are several challenges to effectively offering specialty-specific content (2). First, instructor recruitment and retainment presents a monumental challenge. Also, subspecialized fields are underrepresented in online resources and premade curricula tend to focus on the larger specialties (3). Lastly, TTR course directors may not possess the knowledge to appropriately determine the educational and professional gaps of students matriculating in each specialty. We propose calling upon GME leadership from each specialty to both supply educators for the course and develop educational content that addresses the most prominent deficiencies in incoming interns.

Methods: During the two-week 2023-2024 TTR course, two days will be dedicated to specialty-specific curricula. These curricula will be competency-based and derived from the specialty-specific milestones. Specialty-specific curricula will be co-created by Program Directors and current interns within each specialty, with oversight provided by the TTR Course Directors and the Department of Medical Education. Specialties will select appropriate instructional design methods, including but not limited to skills workshops, simulation sessions, didactic teaching, and small group discussions.

Evaluation Plan: The specialty-specific curricula will be evaluated within the context of the larger TTR course evaluation. Post-course evaluations of students will gauge satisfaction with content and methods, as well as student perceptions of the effectiveness of the curricula in preparing them for intern year. In addition, a focus group will be conducted, with student representation from numerous specialty tracks, to further explore student's reactions to the specialty-specific curricula. Specialty-specific instructors will also be surveyed for their perspectives and feedback on the specialty-specific curricula. Finally, we will send a follow-up survey to students 2 months into intern year, to assess the impact of the specialty-specific curricula on their transition to residency.

Potential Impact: Including specialty-specific tracks in TTR courses will improve student satisfaction, minimize knowledge gaps, and further hone the skills required to deliver competent clinical care on day one of residency. Use of GME-driven development and facilitation of these tracks may improve instructor recruitment and determination of appropriate content.

References:

- 1) "Curriculum Reports." AAMC, www.aamc.org/data-reports/curriculum-reports/report/curriculum-reports. Accessed 2 Oct. 2023.
- 2) Overton, B. Renee. "Transition to Residency Course at US MD Medical Schools." Association of American Medical Colleges, 23 Apr. 2023.
- 3) "TTR Compendium." TTR Course Educators, www.ttreducators.com/compendium. Accessed 2 Oct. 2023.

Online 3d Simulation Technology for Interprofessional Team Training

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Idea: Can cost-effective asynchronous 3D virtual training for non-technical team skills be as effective as physical simulation for team training?

Need: "This study aims to improve interprofessional team training in healthcare. Currently, professionals are trained in silos, which hampers collaborative patient care. This lack of integrated training can lead to medical errors during emergencies, posing ethical, legal, and financial risks.

Physical simulations with mannequins are effective but costly and resource-intensive. We propose exploring asynchronous simulation training in a 3D online virtual environment as a cost-effective solution. This approach could enhance team dynamics and soft skills in healthcare.

Methods: Our primary goal was to design and develop a functional prototype of a 3D virtual simulation environment tailored for interprofessional team training. Within this environment, team members would have agency over their avatars, enabling them to undertake predefined actions on a patient avatar. Meanwhile, an instructor would retain control over the patient's avatar. Moreover, this setup facilitates seamless communication among team members, fostering a collaborative learning experience.

Furthermore, our secondary aim was to evaluate the usability and effectiveness of the developed 3D virtual prototype within a simulated clinical scenario, thereby gauging its potential to enhance team training within a realistic healthcare context.

Evaluation Plan: A prototype was built to hold effective and realistic communication, achieve a training effect, and have easy access. The prototype test was positive and team members of the usability test were satisfied with the prototype functionality.

Potential Impact: Team Training' includes multiplayer functionality with voice chat and dynamic avatar interactions, all under the facilitator's control. Its innovative approach ensures a collaborative, educational, and enjoyable experience. Learners easily communicate and practice globally without incurring extra costs, making it accessible even in remote areas.

References:

- 1) Kononowicz, A. A., Woodham, L. A., Edelbring, S., Stathakarou, N., Davies, D., Saxena, N., Tudor Car, L., Carlstedt-Duke, J., Car, J., & Zary, N. (2019). Virtual Patient Simulations in Health Professions Education: Systematic Review and Meta-Analysis by the Digital Health Education Collaboration. *Journal of medical Internet research*, 21(7), e14676. <https://doi.org/10.2196/14676>
- 2) Diaz, M. C. G., & Dawson, K. (2020). Impact of Simulation-Based Closed-Loop Communication Training on Medical Errors in a Pediatric Emergency Department. *American journal of medical quality: the official journal of the American College of Medical Quality*, 35(6), 474–478. <https://doi.org/10.1177/1062860620912480>
- 3) Gjeraa, K., Møller, T. P., & Østergaard, D. (2014). Efficacy of simulation-based trauma team training of non-technical skills. A systematic review. *Acta Anaesthesiologica Scandinavica*, 58(7), 775-787. <https://doi.org/10.1111/aas.12336>

Implementation of an In Situ Simulation Curriculum in Internal Medicine Residency

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Problem Statement: Bringing a simulation-based curriculum to the clinical setting would likely further increase fidelity and thus improve educational value for trainees.

Rationale: In situ simulation has gained prominence as a valuable tool for medical education, providing a realistic and contextually relevant learning environment. Our curriculum aims to address the gap in internal medicine residency programs by designing and implementing an in situ simulation curriculum, bringing simulation curriculum from the simulation center to the clinical realm. The rationale behind this initiative was to enhance residents' clinical skills, teamwork, and communication in the actual clinical setting, ultimately improving patient care and safety.

Methods: A comprehensive methodology was employed to design, implement and evaluate the curriculum. Initial planning involved curriculum design in collaboration with our simulation staff, and scenario development by facilitators to mirror real-world clinical situations encountered in our academic hospital. Starting in 2021, we conducted simulated scenarios within the hospital, using a high-fidelity Resusci Anne mannequin and hospital conference rooms. During twice monthly sessions, residents and students on inpatient services were notified in advance and participated in scheduled 40 minute simulations, assessing and managing a variety of clinical cases. We developed high-fidelity simulation scenarios that included cardiac arrest, airway management, and complex diagnostic dilemmas such as lactic acidosis and gastrointestinal bleed.

A core group of residency faculty facilitators were recruited and trained on operation of the mannequin. A second facilitator portrayed the bedside nurse. After each simulation, a structured debriefing session was conducted. Facilitators guided residents through a reflective discussion of their performance, a process that encouraged self-assessment, identified areas for improvement, and promoted knowledge integration. To evaluate the curriculum, we utilized a combination of quantitative and qualitative methods. Post-intervention surveys assessed resident confidence levels, as well as effectiveness of the curriculum and suggestions for improvement.

Results: Last year, we piloted the in situ simulation curriculum with 17 sessions and 7 unique cases, reaching an estimated 360 learners, from second-year medical students to senior internal medicine residents. This year, we collected pilot data that has yielded several significant outcomes. Surveying learners with a standard 5-point Likert scale, with 5=Strongly Agree, the course received overwhelmingly positive feedback. With 31 responses over 3 sessions, 93.5% of learners agreed that "In Situ Sim was an overall educational experience" and 96.7% agreed that "There was enough time for the case and debrief". In situ simulation was also relevant and realistic, with 96.7% agreeing with the statement "The case was relevant to my clinical practice" and 93.5% agreeing that "The patient case felt realistic". Regarding the logistics of the group size, we received positive reviews but also room for improvement: 74.2% agreed that "The group size was appropriate".

Qualitative feedback from residents and faculty members echoed the positive outcomes observed. Residents expressed increased comfort and confidence when confronted with real-life clinical scenarios. Many learners expressed appreciation for hands-on application of critical clinical knowledge, and the opportunity to learn from senior residents and faculty during the debriefing sessions. Suggestions for improvement mostly highlighted group size and limitations of the learning environment (eg. room size, mannequin capabilities).

Potential Impact: The implementation of an in situ simulation curriculum in our residency program makes simulation more accessible, adds to the fidelity of simulation, and further enhances trainee clinical

skills and collaboration. We hope to develop this curriculum to serve as a template for other institutions looking to further enhance their simulation education.

References:

- 1) Patterson MD, Blike GT, Nadkarni VM. In Situ Simulation: Challenges and Results. In: Henriksen K, Battles JB, Keyes MA, et al., editors. *Advances in Patient Safety: New Directions and Alternative Approaches (Vol. 3: Performance and Tools)*. Rockville (MD): Agency for Healthcare Research and Quality (US); 2008 Aug. Available from:<https://www.ncbi.nlm.nih.gov/books/NBK43682/>
- 2) Miller D, Crandall C, Washington C, McLaughlin S. Improving teamwork and communication in trauma care through in situ simulations. *Academic Emergency Medicine*. 19(5):608-12. 2012.
- 3) Kobayashi L, Parchuri R, Gardiner FG. Use of in situ simulation and human factors engineering to assess and improve emergency department clinical systems for timely telemetry-based detection of life-threatening arrhythmias. *BMJ quality & safety*. 22(1):72-83. 2013.

Developing Weight Inclusivity in Medical Curricula Through a Trauma-Informed Medical Education Lens

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Idea: We present the use of the trauma-informed medical education framework to revise pre-clinical curricula to reduce harm caused by weight stigma.

Need: Weight stigma is the devaluing of people with larger bodies due to body weight, shape, or size, including discriminatory attitudes, actions, or policies. Health professionals and medical students have been shown to exhibit significant implicit and explicit weight bias, adversely impacting the care they provide to patients with larger bodies. Additionally, medical students themselves experience perceived weight stigma, which contributes to higher rates of anxiety and depression.

Research has shown that students with more adverse childhood experiences (ACEs) have heightened emotional reactivity and stress responses when exposed to trauma-related lectures compared to their peers with fewer ACEs. This implies that personal trauma, such as experiences of weight stigma, may impede students' engagement with emotionally challenging content. Thus, we propose integrating a trauma-informed medical education (TIME) framework into curriculum evaluation as a tool for analysis and revision. We identified a preclinical block of the UCSF undergraduate medical education curriculum wherein we are piloting a TIME-informed assessment and revision with the goal of minimizing weight bias experienced by both by students and their future patients.

Methods: While enrolled in the Renal, Endocrine, Gastrointestinal, and Nutrition (REGN) block of the UCSF preclinical curriculum from January 2023 - March 2023, two first-year UCSF medical students recorded instances where weight loss, eating disorders, and weight stigma were discussed in positive, neutral, or negative ways. The date, lecturer or group facilitator, and content were recorded. Once all data was collected, a team of four UCSF medical students (including the two data collectors) supervised by Peter Ureste, MD used thematic analysis to arrange those instances into themes and sub-themes, which described problems with the current curriculum. We then organized the themes under the six pillars of TIME (safety, trustworthiness & transparency, peer support, collaboration & mutuality, empowerment & choice, and cultural, historical & gender issues). We identified if the themes applied to curricular content, educational context, or both. Once the themes were placed within the TIME framework, we proposed solutions to the identified problems that upheld the value of the respective TIME pillar.

Evaluation Plan: Student and faculty evaluations of the REGN curriculum will be collected before and after TIME revisions. The evaluation will be organized by the TIME pillars, with both a quantitative and qualitative component. The quantitative component will be on a Likert-scale (e.g. How safe did you feel when it came to curricular content related to weight, weight loss, and eating disorders). Quantitative analysis will be analyzed using a Wilcoxon rank test. The qualitative component will consist of free-text questions (e.g. Were there any times during REGN where you did not feel safe when weight, weight loss, and eating disorders was discussed?). Thematic analysis will be used to organize the qualitative responses and a qualitative comparison of before and after changes will be conducted.

Potential Impact: In response to student feedback about the harm done by this curriculum and the established prevalence of weight stigma within medicine, we offer a trauma-informed tool for medical schools to revise their curricula to minimize harm experienced by students related to weight stigma and to optimize the treatment of students' current and future patients

References:

- 1) Brown, Taylor, et al. "Trauma-informed medical education (TIME): advancing curricular content and educational context." *Academic Medicine* 96.5 (2021): 661-667.
- 2) Phelan, S. M., Burgess, D. J., Puhl, R., Dyrbye, L. N., Dovidio, J. F., Yeazel, M., Ridgeway, J. L., Nelson, D., Perry, S., Przedworski, J. M., Burke, S. E., Hardeman, R. R., & van Ryn, M. (2015). The Adverse Effect of Weight Stigma on the Well-Being of Medical Students with Overweight or Obesity: Findings from a National Survey. *Journal of general internal medicine*, 30(9), 1251–1258.
- 3) Persky, Susan, and Collette P. Eccleston. "Medical student bias and care recommendations for an obese versus non-obese virtual patient." *International Journal of Obesity* 35.5 (2011): 728-735.

Word Choice, It Matters! Document with Care

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Problem Statement: Language in the medical chart can perpetuate bias, and this bias can affect clinical decision-making and lead to poorer outcomes.

Rationale: The 21st Century Cures Act guarantees patients access to their medical notes. It is critical that documentation is respectful and humanizing to ensure patient-provider trust and high-quality care. A recent survey found that 10% of patients reported feeling judged and/or offended by providers' documentation.¹ A recent study examining the role of stigmatizing language in documentation on clinical care found that residents and medical students exposed to vignettes with stigmatizing language had more negative attitudes towards the patient and recommended less aggressive care.² This project seeks to answer: Does the implementation of a patient centered language (PCL) curriculum improve the documentation of PCL in the medical record by participants including medical students, internal medicine teaching faculty, and residents at our institution? This project is grounded in cognitive, constructivist and behavior learning theories as well as Kolb's self-regulated learning theory.³

Methods: The project's goal is to provide strategies for health care providers to promote and use PCL. The 90-minute workshop includes a didactic framing, providing an overview of PCL based on literature review. This will be followed by three interactive activities and wrap-up with lessons learned shared by the participants. The workshop can be delivered in person or virtually. Target learners include: Internal medicine (IM) hospitalist faculty at our institution including chief residents and Pediatric hospitalist faculty, including chief residents and fellows and pediatric interns.

The goal is to improve providers' comfort and confidence in using PCL in their documentation, which will be assessed by reviewing use of PCL in medical documentation using a PCL code book. Project outcomes will be evaluated by: completing a pre- and post-survey following the educational intervention to assesses attitudes, knowledge of PCL and skills at and utilization of PCL in their documentation. Participants will complete a facilitated focus group prior to and following the initiative. Chart review of participant's notes will be conducted prior to and following the intervention using a rubric. Trainees will be surveyed about whether they received feedback from faculty on their use of PCL in their documentation. Pre-post surveys will be analyzed using mixed methods. The frequency of stigmatizing language will be quantified and a thematic analysis on the types of language used will be performed

Results: An initial survey of academic adult hospitalists at one of our institutions found that most respondents (87%) felt using PCL in documentation was important. However, the majority (62%) were not confident in their ability to use this language in their own documentation. More data is forthcoming including trainees, pediatric hospitalists and faculty at the Zucker School of Medicine.

Potential Impact: This initiative provides strategies for health care providers to fulfill three patient-centered aims: valuing the role PCL in the delivery of equitable care, recognizing that language biases in documentation impact patient care; adoption of PCL strategies in their medical documentation; advocacy for PCL's integration into all medical documentation.

References:

- 1) P Goddu A, O'Conor KJ, Lanzkron S, et al. Do Words Matter? Stigmatizing Language and the Transmission of Bias in the Medical Record. *J Gen Intern Med.* 2018;33(5):685-691. doi:10.1007/s11606-017-4289-2
- 2) Himmelstein G, Bates D, Zhou L. Examination of Stigmatizing Language in the Electronic Health Record. *JAMA Netw Open.* 2022;5(1):e2144967. doi:10.1001/jamanetworkopen.2021.44967
- 3) Kolb D. *Experiential Learning: Experience As The Source Of Learning And Development.* Vol 1.; 1984.

Unlocking the Gastrointestinal Mysteries: Are WSUSOM Medical Students Getting the Full Taste of GI

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Idea: We ask the question of whether medical students at WSUSOM are getting the adequate exposure necessary to confirm interest in GI early in career?

Need: Gastroenterology (GI) is becoming one of the most competitive specialties in internal medicine with an approximate 60% fellowship match rate.¹ Being competitive applicant for a GI fellowship requires early interest in the sub-specialty, ability to show interest through rotations, doing research, presenting abstracts related to GI at conferences, publishing papers, and even pursuing an extra year as a chief resident, or matching to an unaccredited fellowship related to GI (e.g., hepatology, clinical nutrition) to increase the chances of matching.

A study by AMA noted that almost 80% of medical students applying to internal medicine residency in 4th year were unsure of their specialty of interest prior to starting medical school.² It is unclear how medical students were unsure of their subspecialty of interest. With the competitiveness of GI fellowships ensuring early exposure to GI for medical students is crucial. to potentially solidify interest in Internal Medicine and gastroenterology This is particularly important for Under Represented in Medicine and women students as these groups are underrepresented in gastroenterology in the United states.

Methods: Target learners- First year medical students -Fourth year medical students

Goal of project- Assess whether medical students at WSUSOM are getting the "adequate" exposure necessary to make a sound decision and confirm interest in GI early in their medical school career?

Content of project-

Length and timing- 1 month period to complete the survey, send it out to medical students, and pending their results to answer the questions. Then analyzing the data.

Training site- Wayne State University School of Medicine

Description of interactive methods- Students will complete survey sent out to them electronically, or interviewed in-person to assess their understanding of Gastroenterology as a career.

Evaluation Plan: Analysis plan:

Develop a questionnaire with Likert-scale and open-ended questions to assess interest.

Conduct focus group interviews to delve into reasons behind interest levels.

Descriptive Analysis:

Generate frequency distributions for categorical variables (e.g., what exposure students had to GI, and does it relate to a complete overview of what GI is? Has that helped in verifying interest in GI?

Other questions include medical school standing, and mentorship in the field)

Potential Impact: Identify student suggestions and provide brief recommendations for GI exposure based on medical student input to the leadership at the medical school and hospital rotation sites.

References:

- 1) <https://www.nrmp.org/wp-content/uploads/2023/04/2023-SMS-Results-and-Data-Book.pdf>
- 2) <https://www.ama-assn.org/medical-students/specialty-profiles/specialty-preferences-and-after-med-school-numbers>
- 3) Carethers JM, Quezada SM, Carr RM, Day LW. Diversity Within US Gastroenterology Physician Practices: The Pipeline, Cultural Competencies, and Gastroenterology Societies Approaches. *Gastroenterology*. 2019 Mar;156(4):829-833. doi: 10.1053/j.gastro.2018.10.056. Epub 2018 Nov 17. PMID: 30452917; PMCID: PMC6453700.

Virtual Reality in Psychiatry Education: Applications and Potential

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Problem Statement: Virtual Reality (VR) is a promising tool that can be integrated into psychiatric education.

Rationale: Psychiatry could benefit from developing and integrating VR technology and software for several reasons, including the intrinsic nature of psychiatric conditions. For example, psychosis results in a complex array of visual, auditory and overall sensory perceptions. Moreover, over 1 in 5 between the ages of 13-18 have, or have had, a 'seriously debilitating' mental illness in their lifetime (Centers for Disease Control and Prevention). This highlights the scope and severity of the current mental health landscape. Such conditions are bound to increase in a society with an increasing population and life expectancy. VR training in low-pressure environments might allow learners to gain experience before clinical practice.

Methods: We analysed papers published in peer-reviewed journals. In June 2022, we screened 9900 results on Google Scholar, using the keywords 'virtual', 'reality', 'psychiatry' and 'education', and filtered papers between 2004 and 2023 with the advanced search tool. To be included, papers had the word 'virtual' in the title. After removing conference papers, PhD theses and other papers that were not relevant, 70 papers remained, all written in English.

Each paper was categorised by data type: quantitative, qualitative, mixed or not applicable. These papers were thoroughly evaluated, assessing strengths, limitations, target group and relevance to psychiatry. This cut the paper down further to a core of 14 papers. We found 7 papers targeting students, with the rest aimed at professionals at different training stages. An additional Google Scholar search took place in September 2023 to search for any additional relevant articles released since June 2023. This yielded 10500 results, indicating that extra articles have been released: 2 papers were found to be relevant from the new search, which was then cut to one paper used in the final analysis focussing on nursing students.

Results: Our analysis brought the final number of papers to 8: 5 of which focussed on nursing students and 3 on medical students. Matsumura et al. used a simulation tool and the post-intervention test scores were significantly higher in the experimental group (1). Lam and colleagues reported a significant improvement in students' empathy for mental illness in a large group of undergraduates undergoing VR simulation and good satisfaction overall among the learners, and negative feedback included technical problems and physical discomfort (2). Dupuy and colleagues stated that VR provided more immediate 'patient access' and highlighted that technology could be used at home to prepare for an exam (3). Generally, the impact of VR seems to be more promising when used alongside traditional teaching and learning methods. These results show the potential of VR while also highlighting the need for new technological development and novel applications.

Potential Impact: VR is a versatile educational opportunity to vocational training, but some limitations still need to be addressed before broader implementation. This work encourages the development of VR to complement traditional methods and advocates for more research within psychiatric education.

References:

- 1) Matsumura, Y. et al. *Acad. Psychiatry* 42, 613–621 (2018).
- 2) Lam HY et al. *J. Nurs. Educ. Pract.* 10, 1 (2020).
- 3) Dupuy, L. et al. *J. Affect. Disord.* 263, 1–8 (2020).

Research in Matriculation: Bridging the Gap Between Medical Students & Program Directors

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Problem Statement: With the recent switch to a pass/fail STEP1, we aim to assess program directors' new expectations regarding various types of scholarly output.

Rationale: The selection of applicants for resident training programs is a holistic process. However, with the recent change to a pass/fail STEP1, recent findings showed that 41% (358 out of 873) of program directors (PDs) now prioritize meaningful research participation when granting interviews. The graduating class of 2024 marks the first occasion PDs will review applicants without a STEP1 number, which has only augmented student anxieties regarding research expectations. While there are benefits to student engagement in research, the guidelines of valued research by program directors are currently poorly defined. Understanding the perspective and expectations for engagement in the scholarly activity of program directors can more accurately guide medical students throughout their medical school careers.

Methods: Program directors nationwide were surveyed utilizing the ACGME 2023 program director contact list. All categorical specialties were voluntarily and anonymously surveyed via email with the Microsoft Forms survey tool. Survey questions asked for their specialty as well as expectations regarding various facets of the scholarly output of applicants, including but not limited to an applicant's number of unique projects, number of poster/oral presentations, and number of data-driven projects. Questions ranged from yes or no responses to Likert scale perceptions ranging from not important to very important. Survey responses were aggregated, and both quantitatively and qualitatively analyzed.

Results: As of this submission, we have received feedback from 264 program and assistant program directors representing more than 25 fields from all U.S. regions. The response was mainly academic, several community, and a few rural institutions. Responders almost unanimously reported reviewing scholarly activity during application review. 40% were "neutral" or felt that the type of scholarly activity was "minimally important" while another 40% () felt that the type of scholarly productivity was "fairly important." Overall, all components of scholarly activity were reported to be reviewed by program directors, with lower perceived value on the number of mentor experiences, editorials, prestige of conference, and workshops at a conference. 65% PDs reported no change in perception of scholarly activity importance with the change in STEP 1 to pass/fail. The majority of PDs report 0-1 hypothesis-driven projects; 2-4 peer-reviewed publications; and 0-1 unique mentors as expectations for qualified applicants. There was an array of responses for the number of abstracts presented at conferences with 40% of program directors reporting 0-1 and another 40% reporting 2-4.

Potential Impact: Since the change to pass/fail Step 1, students are pressured to engage in scholarly productivity for career security rather than the pursuit of scholarly understanding and growth. Our findings will help create a clearer understanding of expectations and a more equitable and healthier route to engage in scholarly endeavors.

References:

- 1) Wang A, Karunungan KL, Story JD, Ha EL, Braddock CH 3rd. Residency Program Director Perspectives on Changes to US Medical Licensing Examination. *JAMA Netw Open.* 2021;4(10):e2129557. Published 2021 Oct 1. doi:10.1001/jamanetworkopen.2021.29557
- 2) Wolfson RK, Fairchild PC, Bahner I, et al. Residency Program Directors' Views on Research Conducted During Medical School: A National Survey [published online ahead of print, 2023 Apr 21]. *Acad Med.* 2023;10.1097/ACM.0000000000005256. doi:10.1097/ACM.0000000000005256

A Medical Student's Guide to Successfully Working in Secondary Analysis Research Projects

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Idea: Our idea was to create an organizing framework that supports medical students in developing and successfully completing secondary analysis projects.

Need: Starting as early as the 1960s, medical schools across the United States have developed research programs into traditional medical education for the purpose of broadening student's scientific training (Chang & Ramnanan, 2015). Since then, the role of research in medical school has evolved into its own curriculum with required scholarly projects at many schools. However, there is still no standardized process for student research between medical schools. In 2020, it was found that for almost all specialties, matched MD seniors had a greater number of research experiences and publications compared to students who did not successfully match (Daus & McEchron, 2021). Despite the multiple reports explaining the importance of research to a medical student's career, there is very little published on how medical students work in these projects, and virtually no publications on how to efficiently involve medical students in research during medical school. The purpose of this project is to introduce a detailed framework for integrating medical students and their research mentors to effectively conduct research in secondary analysis based on our experience running a retrospective review project at the Medical College of Georgia.

Methods: Conducting a secondary analysis with medical students can be broken down into the following seven steps:

1. Identify a faculty member, a potential secondary analysis study, and a team of motivated medical students. Hold an overview meeting to provide an outline of the project and discuss potential individual abstracts and sources of publication from the data set.
2. Select a student leader to act as a liaison between students and faculty. This leader also checks in on students' progress and answers questions.
3. Build a data dictionary that serves as a "how to" resource for data abstraction. Create individual student folders for organized collection of data.
4. Go through the data dictionary, assignments, and demo a patient case so every student begins abstraction with the same fundamental knowledge. Develop a project calendar with milestones and deadlines.
5. Begin data abstraction and assign one to two students to audit data collection across all abstractors to ensure consistency. Additionally, create a progress tracker to encourage completion of assignments and manage milestone goals.
6. Once data is collected, code the data appropriately for analysis using statistical software and consult a statistician for interpretation.
7. Develop abstracts to meet publication deadlines and submit.

Please note, IRB approval is necessary for secondary analysis and is required before data abstraction begins.

Evaluation Plan: The purpose of this project is to make completing research easier for medical students, while increasing the benefits of conducting secondary analysis. We are designing a survey for students that evaluates topics including, but not limited to, self-efficacy in conducting research,

understanding of scientific process, and ability to develop a research question. This project was focused on the development of the guideline and program evaluation will continue with subsequent secondary analysis involving medical students. All students who worked on this project attested to its benefit and rated it as their most positive research experience up until this point.

Potential Impact: This framework holds promises of improving medical student experience in graduate research, thus promoting new classes of doctors with positive outlooks on research. By following these steps, medical students can achieve confidence in their abilities to successfully conduct research in medical school, residency, and as attendings.

References:

1) Chang, Y., & Ramnanan, C. J. (2015). A review of literature on medical students and scholarly research: experiences, attitudes, and outcomes. *Acad Med*, 90(8), 1162-1173.

<https://doi.org/10.1097/ACM.0000000000000702>

2) Daus, K., & McEchron, M. (2021). The impact of medical student research as a discussion topic during the residency interview process. *BMC Med Educ*, 21(1), 556.

<https://doi.org/10.1186/s12909-021-02989-x>

Veterinary Students' Sense of Belonging: Growing Community with Small Group Academic Enhancement

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Problem Statement: student's sense of belonging to a university is associated with success in academic setting, happiness, and satisfaction.

Rationale: It is therefore unsurprising that universities commonly strive to improve student measures of belonging especially considering its negative correlation with attrition rates. Student's sense of belonging amongst peers, faculty, and on campus experiences are correlated to improvement in wellbeing, academic achievement as well as easing the transition to the new academic setting [1]. Indeed, academic progress, happiness, satisfaction, future goals and lack of attrition from school are all associated with students' sense of belonging [2, 3]. It is known that social connectedness can impact achievement motivation [4], and that mutually supportive faculty-student interactions have been documented to cultivate attributes of trust, belonging and inclusion [5]. These interactions are frequently the powerful predictors of student academic persistence and engagement [6, 7].

Methods: Small, group, faculty-guided weekly discussion sessions were introduced to the Veterinary Professional Foundations course (VPF) In January of 2022, to complement a series of updated didactic only lectures. Voluntary surveys ("Belonging to the university scale" [1], and the "Personal accountability in education scale" [8]), were utilized to document student attitudes and feelings surrounding these variables. Likert scores from a control group of students who completed the VPF course prior to the curricular change, were compared to the intervention group who engaged in the weekly guided discussion sessions via a Wilcoxon test.

Results: In the Fall semester 2021, of the 186 first year students enrolled in their first semester, 132 (71%) participated, serving as the control group. In the Spring semester 2022, of the 213 first year first students enrolled in their first semester, 132 (55%) participated, serving as the intervention group. The control and intervention cohort groups were found to be comparable regarding undergraduate prerequisite GPA (p-value = 0.4), first semester veterinary GPA (p-value = 0.1 Appendix C), sex, race identification, and age.

The intervention cohort scored higher on the "Belonging to the university scale" with significant differences associated with 5 of 14 Likert statements; specifically in correlation with feeling comfortable stating all kinds of thoughts at the university (p = 0.027), being proud of belonging to the university (p = 0.017), believing the university's social activities meet expectations (p = 0.025), feeling that student problems are solved by the university (p = 0.001), and feeling that student opinions are valued by the university (p = 0.008).

The "Personal accountability scale" resulted in only one out of thirteen questions showing significantly different Likert scores between groups. Specifically, the intervention group (having experienced the small group discussions with faculty) agreed less with a statement associated with getting credit for their success in their classes compared to the previous semester (control).

Potential Impact: The intervention group reported significantly improved feelings of belonging to the university (p-values ranging from 0.008 to 0.027). Minimal change was noted between groups associated with accountability. The addition of weekly small group meetings has proven valuable at RUSVM in improving student sense of belonging to the university.

References:

- 1) Vogt, C.M., Faculty as a critical juncture in student retention and performance in engineering programs. *Journal of Engineering Education*, 2008. 97(1): p. 27-36.
- 2) Karaman, O. and Y. Cirak, The Belonging to the University Scale. *Acta Didactica Napocensia*, 2017. 10(2): p. 1-20.

- 3) Strayhorn, T.L., *College students' sense of belonging: A key to educational success for all students*. 2018: Routledge.
4. Walton, G.M., et al., *Mere belonging: the power of social connections*. *Journal of personality and social psychology*, 2012. 102(3): p. 513.
5. Burke, P.J., et al., *Capability, belonging and equity in higher education: Developing inclusive approaches*. Newcastle, NSW: Centre of Excellence for Equity in Higher Education, The University of Newcastle, 2016.
6. Stage, F.K. and D. Hossler, *Linking student behaviors, college choice, and college persistence. Reworking the student departure puzzle*, 2000: p. 170-195.
7. Umbach, P.D. and M.R. Wawrzynski, *Faculty do matter: The role of college faculty in student learning and engagement*. *Research in Higher education*, 2005. 46(2): p. 153-184.
8. Rosenblatt, Z., *Personal accountability in education: measure development and validation*. *Journal of Educational Administration*, 2017.

The Main Stress Factors Contributing to Burnout Among Medical Students

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Problem Statement: to evaluate the level of burnout among medical students and identify the main stress factors contributing to it.

Rationale: Burnout is more predominant in medical students compared to the common population due to intemperate scholarly, individual, and societal stressors. Disappointment with the learning environment, lack of faculty support, sex discrimination, non-ethnic minority status, high educational debt, disintegration of social ties, and individual relationship are a few of the causes distinguished for burnout among medical students. Early identifying and addressing the causes of burnout and diminished well-being of medical students is utmost importance for their overall health and academic success.

Methods: The online study using Google form was conducted at Trinity Medical Sciences University (TMSU), Saint Vincent & the Grenadines. There were 82 participants, 34.1%- male and 65.9% - female. The response rate for online survey was 69%. The mean age of the participants was 27.4±5.9 years (varying from 20 to 55 years). All students in preclinical terms were invited to participate in this study, which was conducted between the 8th to 9th weeks of each term. Participation in the study was voluntary, and informed consent was obtained from all participants. Participants were asked to provide information regarding their age, gender and answer Maslach Burnout Inventory-Student Survey (MBI-SS), which evaluates the emotional exhaustion, depersonalization or cynicism, and professional efficacy of medical students. Also, participants were asked to indicate the possible causes of their high stress level among the following:

1. Academic stress (Poor academic performance, fear of failure etc.)
2. Financial stress
3. Stress in a personal relationship such as marriage decay
4. Stress from an emotional trauma such as death of a loved one
5. Stress from medical illness
6. Side effects of a medication
7. Influence from an illicit drug/alcohol
8. Lack of social support eg. Being away from friends and family
9. Adapting to a new environment

Results: Frequency analysis of MBI-SS showed that the Emotional Exhaustion (EE) was experienced by 17.1% of students every day, 26.8% - a few times a week, 14.6% once a week, 26.8%- a few times a month, 12.2% - once a month or less and 2.4%-a few times a year. Depersonalization or cynicism, which corresponds to impersonal responses and lack of empathy during professional activity, was reported in 7.3% of students every day, 9.8% - a few times a week, 17.1%- once a week, 34.1%- a few times a month and 31.7% - once a month or less. Professional Efficacy, which reflects feelings of competence and achievement of success at work, was indicated by 14.6% of students every day, 29.3% - few times a week, 29.3%- once a week, 17.1% - a few times a month and 9.8%- once a month or less. Academic stress was reported by 95.1% of students, financial stress – 68.3%, stress in a personal relationship such as marriage decay 39%, stress from an emotional trauma such as death of a loved one – 26.8%, stress from medical illness -22%, side effects of a medication -7.3%, influence from an illicit drug/alcohol- 2.4%, lack of social support eg. Being away from friends and family – 14.6%, adapting to a new environment – 17.1%.

Potential Impact: This assessment helped to evaluate students' burnout and identify the challenges faced by the students, support those who most need it, and help prevent negative outcomes by addressing student suffering. The school would also be able to monitor its learning environment and create successful programs to promote the well-being of students and reduce

References:

- 1) Ahmed, I., Banu, H., Al-Fageer, R., & Al-Suwaidi, R. (2009). Cognitive emotions: Depression and anxiety in medical students and staff. *Journal of Critical Care*, 24(3), 1-7. doi: 10.1016/j.jcrc.2009.06.003.
- 2) Dyrbye, L.N., & Shanafelt, T. (2016). A narrative review on burnout experienced by medical students and residents. *Medical Education*, 50(1), 132–149. [https://doi.org/ 10.1111/medu.12927](https://doi.org/10.1111/medu.12927)
- 3) Shanafelt, T.D., Hasan, O., Dyrbye, L.N., Sinsky, C., Satele, D., Sloan, J., & West, C. P. (2015). Changes in burnout and satisfaction with worklife balance in physicians and the general US working population between 2011 and 2014. *Mayo Clinic Proceedings*, 90, 1600–1613. doi: 10.1016/j.mayocp.2015.08.023.

Textiles and the Feminine in Surgery: a Decolonial Unspooling of Techniques

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Idea: A therapeutic analysis of the threads that weave surgical practice with ancient and feminine textile arts, through a decolonial lens.

Need: In the surgical field, suturing is not only a fundamental praxis, but a product of several influences, whose development history is often intertwined with those of the textile arts. Traditional and stereotypically connected with the feminine, weaving, embroidery, lacemaking, and various other textile techniques are often regarded as frivolous, merely decorative, and strongly associated with domesticity. These practices however, are glimpsed through medical history as sources of experimentation and imaginative potential. By analyzing the development of surgical techniques from a decolonial perspective, one can not only study the historical evolution of the field, but also shed light on the actors and subjects long erased by the coloniality of power in the medical system of knowledge.

Methods: Targeting medical researchers and scholars, two examples are analyzed to demonstrate how textile techniques were explored by surgeons to develop new techniques and technologies for the medical field. The first one, the case of French surgeon Dr. Alexis Carrel. He learned sewing and embroidery techniques during his youth from Mme. Leroudier, a seamstress and embroiderer, and later adapted fine lace needles and silk embroidery thread for use in delicate surgery. Inspired by his embroidery lessons, Carrel developed his technique of triangulation vascular anastomosis, widely used in surgeries to this day. The second example is the case of Dr. Franz Freudenthal, a Bolivian cardiologist who developed an occluder now patented under the name Nit Occlud. While most standard occluders are made on an industrial scale, Freudenthal's version is too small and intricate to be mass-produced. He listed indigenous women of the Aymara ethnic group to hand knit them. Their traditional skill in weaving and knitting is essential for the production of occluders with its delicate nitinol thread weaving. In both cases, a technique dominated by women (and therefore undervalued in society) was fundamental in the creation of new technologies. Aiming to investigate the presence of female craftsmanship in surgical practice, this study uses Anibal Quijano's concept of coloniality of power in the form of systems of knowledge to reflect on how medical education could avoid being a colonial artifact.

Evaluation Plan: As part of the research for a Masters of Education dissertation, this investigation sheds light on the hidden craftsmanship of surgical practice and its feminine aspect through the use of textile techniques. While Western science is based on the idea that its superiority comes from the production and application of knowledge accumulated through its natural evolution of "primitive" sciences, a decolonial approach evaluates the multidisciplinary potential of medical research when it is directed towards an epistemic revolution in medical education, where modern medicine's basis in colonial practices can be reimagined, unspooled and rewoven.

Potential Impact: By seeking to expand its creative horizons through textile arts, medical education is able to shift its status as a colonial artifact to recover and recognize the place of feminine knowledge and practice in its (r)evolution.

References:

- 1) QUIJANO, A. Colonialidade do poder, Eurocentrismo e América Latina Título. Em: CLACSO, CONSEJO LATINOAMERICANO DE CIENCIAS SOCIALES EDITORIAL/EDITOR (Ed.). A colonialidade do saber: eurocentrismo e ciências sociais. Perspectivas latino-americanas. [s.l: s.n.]. p. 117–142.
- 2) FREUDENTHAL F. A new way to heal hearts without surgery. In: TED CONFERENCE 2016, 10, 2016, Vancouver. Available at: <https://www.ted.com/talks/franz_freudenthal_a_new_way_to_heal_hearts_without_surgery>. Acesso em: 08 abril 2019.

- 3) FABIANI, Jean-Noël. 30 histórias insólitas que fizeram a medicina: O impensável, o acaso e a genialidade por trás dos maiores avanços médicos desde a Antiguidade. Vestígio Editora, v. 3, f. 176, 2019. 352 p.

Impact of a Mixed Media Project in a Pharmacy International Student Summer Program

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Problem Statement: To evaluate the impact of a collaborative mixed media project for communication of drug information in a program for international pharmacy students.

Rationale: The advancement of accessible technologies has revolutionized pharmacy education and transformed the way future pharmacists are trained. Utilizing technology generates a more engaging environment for students to grasp complex topics at their own pace and assess their progress in real-world scenarios. As a subset of technology, social media is a universal platform used for connection and communication by millions of people globally. Social media may also have an important role in healthcare education (1,2). During our 2023 International Student Summer Program (ISSP 2023) we designed a mixed media project that aimed to foster small group collaborations among a culturally diverse group of students. Their goal was to create a social media post or video to convey information on a new drug product at an appropriate level for patient understanding using the following platforms: Instagram, YouTube, TikTok, or Facebook

Methods: ISSP 2023 included 100 students from 9 countries and 23 universities. This program has been offered for several years and has the aim of providing an immersive understanding of the pharmaceutical landscape within the United States (3). Students studied material in sections based on their focus area of interest: clinical pharmacy, regulatory science, or pharmacology. The students were then placed into 12 groups of 9 students that consisted of a mix from each focus area. Each group was assigned a drug formulation that was newly approved on the market. The students were then given the task of creating a social media post or video describing significant characteristics related to their drug, including the indication, side effects, and patient counseling points. Using their own creative agency and Instagram, YouTube, TikTok, or Facebook, they could decide the manner in which their mixed media was developed and portrayed. For video presentations, each group was allotted two minutes. The resulting mixed media projects were incorporated into a formal culminating presentation on their assigned drug on the last day of the program. After the program, the students were surveyed on their opinions on the value of the mixed media project

Results: The mixed media presentations included a range of approaches, all of which were aimed at communicating key information about the drug formulation at an appropriate level to promote patient understanding. These included depictions of counseling of patients by pharmacists (with students playing each role), narrative stories with humor, and "news broadcasts" about the drug product. Some groups chose to use animated approaches or videos that attracted attention through innovative use of graphics. These different choices were all engaging and interesting, and showed considerable thought in the communication, in addition to an excellent grasp of the background knowledge on the formulation, which had been built in the program. In the post-program survey, we obtained responses from 61/100 students, of which 49 were of relevance to the prompt: "What did you like most about completing the "Mixed Media" project?". These 49 responses were classified into 7 categories, with some responses covering multiple categories (giving a total of 76 categorized responses): Information-sharing (n=14, 18.4%), Innovation/Creativity (n=10, 13.2%), Teamwork (n=19, 25.0%), Fun (n=16, 21.1%), Tech/New skills (Video editing, etc.) (n=7, 9.2%), Artistic Performance (n=4, 5.3%), and Challenging (n=6, 7.9%).

Potential Impact: The videos showcased drug information in a creative manner. Students expanded their communication skills, and overcame language and cultural barriers among themselves and the audience. The mixed media project deepened understanding of marketed drugs, promoted teamwork, and challenged students to communicate complex topics to a lay audience.

References:

- 1) Cheston CC, Flickinger TE, Chisolm MS. Social media use in medical education: a systematic review. *Acad Med.* 2013;88(6):893-901. doi:10.1097/ACM.0b013e31828ffc23
- 2) Xiong P, Zhang J, Wang X, Wu TL, Hall BJ. Effects of a mixed media education intervention program on increasing knowledge, attitude, and compliance with standard precautions among nursing students: A randomized controlled trial. *Am J Infect Control.* 2017;45(4):389-395. doi:10.1016/j.ajic.2016.11.006
- 3) Kim RE, Morningstar-Kywi N, Romero RM, Chan KM, Gabrielyan L, Mojab Y, Parikh SS, Nokes L, Graham T, Haworth IS. An online international pharmacy summer course during the COVID-19 pandemic. *Pharmacy Educ.* 2020;20(2):136-144. Doi:10.46542/pe.2020.202.136144

ChatGPT Validation of an Anti-Racism in Medical Education Questionnaire

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Problem Statement: Survey validation involves expert opinions, focus groups, and pilot testing, but can be time-consuming and yield biased questions.

Rationale: Ensuring the effectiveness of assessment tools or surveys, thorough quality checks is essential. Validity confirms that the instrument measures its intended criteria. Validation methods encompass literature reviews, interviews, focus groups, and expert evaluations. It's crucial to scrutinize each survey item for appropriateness, eliminating ambiguity and bias, especially in sensitive areas like racism. Maintaining neutrality in question phrasing is vital to avoid implying socially desirable responses. Utilizing ChatGPT expedites survey creation, yielding less biased and clearer questions. AI models like ChatGPT are rapidly evolving. Within five days, it attracted a million users worldwide after its release, making it the "fastest-growing app" in web application history. Despite being recognized as a valuable research tool, there is a lack of references showcasing its application in validating surveys related to learning environments or anti-racism.

Methods: In this study, the authors utilized both ChatGPT version 3.5, a free and accessible Artificial Intelligence (AI) model and the paid version 4.0, to validate a new anti-racism in medical education survey. The survey tool was adapted from a validated Learning Environment scale and was edited by a panel of experts who identified specific domains and themes to assess. The researchers prompted ChatGPT with the survey items followed by prompts to assess each question. In response, ChatGPT not only identified weak areas in the survey, but it also provided suggestions for improvement. The researchers then conducted a student focus group and prompted students with the same questions asked of ChatGPT. The researchers then compared the responses to identify similarities and differences between ChatGPT validation and student validation.

Results: Using ChatGPT brought notable advantages in terms of speed and efficiency. It rapidly analyzed survey items, offering quick feedback confirming their alignment with intended themes. Both ChatGPT versions identified similar themes despite differences in wording. One significant benefit was its ability to spot ambiguous phrasing, a blind spot in small-scale pilot testing with students. ChatGPT swiftly recognized unclear terms like "allies" and "anti-racist behaviors," proposing context-specific examples for clarity. Additionally, ChatGPT effectively pinpointed survey strengths, such as question clarity and goal alignment, facilitating future data analysis. Weaknesses, like ambiguity and subjectivity, were also revealed, prompting suggestions for follow-up questions on bias experiences. The AI tool even enhanced grammar and reduced leading questions, improving response accuracy. However, it lacked the contextual understanding inherent in the student focus group, which represented the survey's target audience. While the focus group provided valuable insights, they sometimes couldn't match ChatGPT's detailed responses. Nevertheless, ChatGPT emphasized its role as a complement, not a replacement, to content experts and other validation techniques in the survey development process.

Potential Impact: The study showcased the speed and versatility of survey development while using ChatGPT, but cautioned about its limitations. It may lack contextual understanding, requiring expert guidance alongside other validation methods to maximize its potential.

References:

- 1) Shochet RB, Colbert-Getz JM, Wright SM. The Johns Hopkins learning environment scale: measuring medical students' perceptions of the processes supporting professional formation. *Acad Med.* 2015 Jun;90(6):810-8. doi: 10.1097/ACM.0000000000000706. PMID: 25853689.
- 2) OpenAI. (2023). ChatGPT (June 21 version) [Large language model]. <https://chat.openai.com/chat>

- 3) Hosseini M, Gao CA, Liebovitz DM, Carvalho AM, Ahmad FS, Luo Y, MacDonald N, Holmes KL, Kho A. An exploratory survey about using ChatGPT in education, healthcare, and research. medRxiv [Preprint]. 2023 Apr 3:2023.03.31.23287979. doi: 10.1101/2023.03.31.23287979. PMID: 37066228; PMCID: PMC10104227.

Assessing the Impact and Development of Mentors and Leaders in Medical School Learning Communities

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Problem Statement: We aim to assess the impact of serving as a mentor within a Peer Mentoring Program at WSUSOM on medical student growth and development.

Rationale: The literature has demonstrated a beneficial intention of Learning Communities (LCs) to improve experiences and growth of students in medical school education across the United States. LCs create a bridge for senior students to engage with peers to provide advice and support. There is great focus on the benefits of mentorship to mentees, but we found a lack of findings on the benefits of mentorship to the mentors themselves. Anecdotally we found that LC Coordinators and Peer Mentors are likely to gain confidence in communication, empathy, and leadership from their experiences as Coordinators and Mentors - skills that are all well received traits for residency. We are interested in describing and quantifying the positive impacts of leadership and mentorship on the individuals serving as Coordinators and Mentors to provide a better understanding of the role of student leadership and mentorship in medical education and its potential influence on career development.

Methods: This study aims to elucidate an objective measure of student leader and peer mentor growth and development. We will evaluate opinions on WSUSOM's Learning Community Program's and Peer Mentorship Program's abilities to foster professional attributes with the aim of identifying and quantifying features of personal growth— including leadership, communication, and empathy—to assess for paradigms of improvement. Through Qualtrics self-rated queries using a Likert scale, we will survey 32 Learning Community Coordinators from Classes of 2023-2026 and 24 second-year medical (M2) student Peer Mentors. Coordinators will be surveyed at four time-points: upon election (during MS1 year), during their MS2 and MS3 years, and at the final stretch of MS4. Peer Mentors will be surveyed at three time-points: at the beginning of their mentorship program, half-way through the program, and at the end of the year-long program. Survey findings will be delivered via PowerPoint or poster presentation. The goals of such a session are to validate the benefits of Learning Community Coordinator and Peer Mentorship Programs at medical schools and other graduate-level institutions.

Results: Our survey results endorse that mentors's professional and interpersonal skills improved over the course of the year as a result of their mentorship experience. This was demonstrated by an increased sense of capability in handling hypothetical situations as well as an increased sense of self-confidence upon self-reflection. The skills assessed included communication, empathy, and leadership. Interestingly, we found that the survey provided mentors an opportunity to reflect on their experience, which further helped the mentors realize their own development and gain a sense of achievement, confidence, and continued passion for mentorship.

The survey additionally presented an opportunity to gauge where mentors struggled and revealed that mentors place high priority on building mentees' confidence and supporting mentee goal achievement but individually lacked confidence in facilitating these outcomes.

We also used the survey as a tool to assess areas for improvement in the program. One of the pillars we assessed was the benefit of an educational intervention. Students responded that they are interested in an optional curriculum to allow them to further develop in areas they felt weak.

We hope to use these findings to fine-tune our Peer Mentorship Program to continue to be of benefit to the mentors in the program.

Potential Impact: This research presents a quality assessment tool that will be repeated in 2023 to build longitudinal findings. Serving as a Mentor or Coordinator offers opportunities for individual growth and development in personal and professional skills. Overall, we hope this study informs and supports the benefits of near-peer mentorship in medical education.

References:

- 1) Nicholson LJ, Rodriguez-Cuadrado S, Woolhouse C. Reframing peer mentoring as a route for developing an educational community of practice. *Mentoring & Tutoring: Partnership in Learning*. 2018;26(4):420-440. doi:10.1080/13611267.2018.1530163
- 2) Anderson L, Silet K, Fleming M. Evaluating and Giving Feedback to Mentors: New Evidence-Based Approaches. *Clinical and Translational Science*. 2012;5(1):71-77. doi:10.1111/j.1752-8062.2011.00361.x
- 3) Benjamin Mimi. Preparing Learning Community Peer Mentors to Support Students' Transitions. *Learning Communities Research and Practice*. 2020;8(2). <https://eric.ed.gov/?id=EJ1285335>

A Pilot Cohort-Based Leadership Program for Advanced Practice Providers

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Idea: A pilot cohort-based program specifically tailored for advanced practice providers to develop and enhance their leadership skills.

Need: Leadership skills are crucial to improving the quality of care in healthcare, fostering interdisciplinary collaboration, addressing complex organizational challenges, and effecting change in the healthcare ecosystem. Hospitals and healthcare systems have increasingly relied on Advanced Practice Professionals (APPs) in the last few years. Hooker et al. (2022) project a 35% increase in physician associates by 2035. Anecdotal reports indicate that APPs have a complex multidimensional concept of leadership that is less clear-cut than physician leaders due to traditional viewpoints about the role of APPs compared to physicians. In an online survey, Bellassai et al. (2014) discovered that “only 12% of programs provide any amount of stand-alone leadership training.” They conclude that “although leadership training is viewed by professional PA organizations and PA program directors to be important, only about half of programs provide leadership training for PA students due to a variety of barriers, primarily time constraints.” A needs assessment was deployed to understand the targeted learners, including their previous experiences, learning needs, expectations, and motivations. Data analysis showed that APPs require a tailored design.

Methods: The 4-month cohort-based online program targets early to mid-career advanced practice nurses and physician associates. Its primary aim is to provide a well-rounded foundation of leadership skills to enhance individual competencies and improve organizational outcomes. The pilot program enrolled 40 APPs to engage in content delivered via synchronous online sessions, asynchronous self-paced modules, and coaching opportunities. Learners were not required to have any prior leadership training. Although there is no singular guideline on leadership, there is a consensus and a frame of reference about the competencies and skills that should be reflected in a leader. Effective communication, emotional intelligence, and related soft skills have been shown to enhance self-awareness and professional application among healthcare providers (Abraham et al., 2021). The evidence-based curriculum developed comprehensively addresses these competencies and critical leadership skills. Program content also includes topics such as Diversity, Equity, and Inclusivity, Situational Leadership, and Navigating Organizational Politics. The program concludes with a Capstone Project, outlining a personal 'strategic plan' for advancing their leadership journey. Interactive elements include collaborative discussions, engagement with industry experts, self-assessment tools, and unlimited one-on-one coaching sessions with professional coaches to facilitate meaningful learning and skill application.

Evaluation Plan: Measure methods used to evaluate this program will be congruent with the learners' objectives, aligned with the educational strategies, and provide aggregate results to answer the evaluation question. The curriculum evaluation will occur in an ongoing fashion throughout the program. Although we will receive immediate feedback at the session level, the final evaluation will be at the program level. The multi-stage evaluation plan includes: 1. Session Level: Participants will complete a post-sync session evaluation form, rating session effectiveness and its potential influence on their leadership using a 3-point Likert scale. For self-paced modules, a 5-point Likert scale survey will be administered after each module to evaluate each topic's engagement, interactivity, quality, delivery, effectiveness, and perceived value. 2. Program Level (Summative): After the program, participants will complete Likert-scale evaluations assessing the perceived content quality, effectiveness of delivery methods, costs, and time commitment. Similar evaluation delivery will seek additional feedback on speakers and the professional coaching component.

Potential Impact: The curriculum can prepare future APPs and positively impact healthcare organizations in several ways, such as improved interprofessional collaboration, reduced implicit bias in

healthcare and associated health inequalities, and better organizational culture through effective leadership principles.

References:

- 1) Abraham, T. H., Stewart, G. L., & Solimeo, S. L. (2021). The importance of soft skills development in a hard data world: learning from interviews with healthcare leaders. *BMC medical education*, 21(1), 147. <https://doi.org/10.1186/s12909-021-02567-1>
- 2) Bellassai, R. J., Glass, C. C., Halderson, P. E., & Schoeberl, J. B. (2014). Leadership training in physician assistant programs: A survey of program directors. In *Proceedings: 10th Annual Symposium on Graduate Research and Scholarly Projects*. Wichita, Ks: Wichita State University, 56. <https://soar.wichita.edu/handle/10057/10785>
- 3) Hooker, R. S., Kulo, V., Kayingo, G., Jun, H. J., & Cawley, J. F. (2022). Forecasting the physician assistant/associate workforce: 2020-2035. *Future healthcare journal*, 9(1), 57–63. <https://doi.org/10.7861/fhj.2021-0193>

Student Led Didactic Session Prepares Students to Perform Nutritional Counseling in Clerkships
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Problem Statement: Despite rising rates of obesity and diet-related chronic illnesses, medical students often receive limited training in nutritional counseling.

Rationale: About 74% of adults and 40% of children and adolescents are overweight or have obesity, and 60% of adults have at least one diet-related chronic illness [1]. Additionally, the USPTF has set goals to increase the amount of primary care visits that include or order nutritional counseling to 75%, but the proportion of visits with nutritional counseling decreased from 42% to 40% at a midcourse review [2]. Despite the growing need for dietary counseling, according to Adams et al., 71% do not fulfill the 25 hours of nutrition education recommended by the National Research Council and many do not even come close to that benchmark [3]. It is important to maximize the efficiency of the nutritional sessions that are being included. This study serves to assess the efficacy of one such nutritional counseling training session for third year medical students.

Methods: Third-year medical students are exposed to nutritional counseling and food insecurity through didactics during their pre-clinical years. This session builds upon that foundation by adding practical skills. All members of the third-year class (over 200 students) are required to participate in the virtual session during their primary care clerkship. The session begins with a 90-minute faculty-led portion that includes didactic education on different dietary approaches to common chronic illnesses (e.g. DASH diet) and an interactive exercise about shopping on a budget. This is followed by a 90-minute student-led section that reviews the motivational interviewing conceptual framework, takes students through role-play scenarios to practice nutritional assessments and dietary counseling, and familiarizes students with different local resources to provide to patients.

Members of the classes of 2021-2023 filled out pre and post-surveys about their knowledge and confidence regarding dietary assessments and nutritional counseling and then filled out a post-third-year survey to assess which skills they used, in which clerkships, and what their confidence level was going into fourth year. The 2022-2023 surveys also asked about student experiences with diet assessments prior to the session. The surveys were conducted via Qualtrics and Google Forms and included free-response questions as well as 0-4 Likert scale ratings, and all statistical analysis was performed using Microsoft Excel.

Results: 51 and 56 students respectively responded to the survey in 2021-2022 and 2022-2023. All students responded to all questions, so they were all included in the analysis. Of the respondents, 93/107 (86.9%) reported that they had provided basic dietary counseling since the session. 86/107 (80.4%) reported that they had initiated diet assessments since the session. 62/107 (57.9%) reported performing food insecurity screenings since the session. The core third year clerkships are primary care (4 weeks), internal medicine (8 weeks), surgery (8 weeks), obstetrics/ gynecology (6 weeks), pediatrics (6 weeks), neurology (4 weeks), and psychiatry (6 weeks). In those rotations, 73/107 (68.2%) performed diet assessments in the primary care rotation, 55/107 (51.4%) in internal medicine, 17/107 (15.9%) in surgery, 12/107 (11.2%) in obstetrics/ gynecology, 67/107 (62.6%) in pediatrics, 1/107 (0.9%) and no diet assessments were performed in the psychiatry rotation. Based on the Likert scale of 0 (not at all confident) to 4 (very confident) the mean score of how confident students felt initiating diet assessments as a fourth year was 2.97 with a standard deviation of 0.68.

Potential Impact: 1) helps deepen and reinforce knowledge of nutritional counseling and food insecurity from prior education in pre-clerkship years.
2) allows students to practice hands-on skills and develop confidence using practical resources.
3) senior medical students can complement faculty for clerkship curriculum development and small group facilitation.

References:

- 1) U.S. Department of Agriculture and U.S. Department of Health and Human Services. Dietary Guidelines for Americans, 2020-2025. 9th Edition. December 2020. Available at [DietaryGuidelines.gov](https://www.dietaryguidelines.gov)
- 2) Kolasa, K.M. and Rickett, K. (2010), Barriers to Providing Nutrition Counseling Cited by Physicians. *Nutrition in Clinical Practice*, 25: 502-509. <https://doi.org/10.1177/0884533610380057>
- 3) Kelly M. Adams, W. Scott Butsch, Martin Kohlmeier, "The State of Nutrition Education at US Medical Schools", *Journal of Biomedical Education*, vol. 2015, Article ID 357627, 7 pages, 2015. <https://doi.org/10.1155/2015/357627>

Disparities in Dermatology: Student-Led Skin Screenings in Underserved Areas

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Idea: Implementation of a free, medical student-run skin screening program to help manage dermatologic care for underserved populations in New Jersey.

Need: An abundance of literature has delineated that there are prominent racial disparities in dermatology, perpetuated by poor health literacy, differing clinical presentation, and socioeconomic status. This may lead to decreased risk perception of skin conditions such as melanoma, leading to greater morbidity and mortality. Medical students have the opportunity to create change and address dermatologic disparities. Integrating exposure to conditions that affect people of color (POC) early in medical school curriculums will create well-rounded, culturally competent physicians. This student-led program will not only provide healthcare services but also foster empowerment, education, and community engagement in underserved communities. Camden and Freehold are especially vulnerable communities in NJ, where Black and Hispanic residents face greater challenges in accessing high-quality health care compared to their White counterparts. This program will provide dermatologic access and screening to patients who otherwise wouldn't be able to afford dermatologic care. This program will also help bridge the gap in dermatologic disparities, while arming medical students with clinical and diagnostic skills they will use as successful physicians.

Methods: Implementation of a student-run skin lesion screening program will allow for greater access to dermatologic healthcare in underserved communities. The target audience of this program is medical students in their first and second years of medical school. Medical students will be recruited from Rowan-Virtua School of Osteopathic Medicine and will be guided by the Robert Wood Johnson Medical School Family Medicine Residency at CentraState. This is a longitudinal two-year program where students will commit 5 hours a week to assess users' skin conditions and provide management and education. Members of underserved communities may submit an application to have their skin lesion assessed via a Google Form. The form will be created in both English and Spanish and will include standardized history and physical questions, as well as allow for users to submit an image of their skin lesion. The form will ensure users have consented to uploading their photos. Consent will also be asked if users' images may be used to train AI algorithms to better diagnose skin conditions in skin of color. All patient information stored will be password protected and HIPAA compliant. This form will be directed to a medical student who will review the information and work with a family practice resident to come up with an assessment and plan and subsequently follow up with the patient.

Evaluation Plan: This program will be evaluated by key performance indicators such as the number of screenings conducted, referrals made, referrals completed, user satisfaction, and changes in skin health knowledge. Screenings will be initially reviewed by a medical student and subsequently approved by a family practice resident to ensure accurate information is relayed to the user. Medical students part of the program will undergo training to ensure they are confident in assessing a history and physical, as well as identifying images of skin lesions in various Fitzpatrick skin types. Medical students will receive feedback from the residents on a regular basis to improve their skills in assessing a history and physical and identifying skin lesions. Additionally a survey will be administered to users after their debrief with the medical student to assess their satisfaction with the program and assess any changes in their dermatologic health literacy.

Potential Impact: Lack of health literacy and access to dermatologic care increases morbidity and mortality in POC. This program aims to address these disparities, as well as educate medical students on conditions that affect POC.

References:

- 1) Fliorent R, Podwojniak A, Adolphe L, et al. (January 13, 2023) Racial Differences in Perceived Risk and Sunscreen Usage. *Cureus* 15(1): e33752. doi:10.7759/cureus.33752
- 2) Dawes SM, Tsai S, Gittleman H, Barnholtz-Sloan JS, Bordeaux JS: Racial disparities in melanoma survival. *J Am Acad Dermatol.* 2016, 75:983-91. 10.1016/j.jaad.2016.06.006
- 3) Tripathi R, Archibald LK, Mazmudar RS, Conic RR, Rothermel LD, Scott JF, Bordeaux JS: Racial differences in time to treatment for melanoma. *J Am Acad Dermatol.* 2020, 83:854-9. 10.1016/j.jaad.2020.03.094

From Classroom to Clinic: Preparing Medical Students with Discharge Summary Expertise

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Idea: Implementation of a medical school program on discharge summaries, their importance in patient care, and their role in healthcare communication.

Need: Currently, there is a lack of research on discharge summaries in the United States compared to other countries, such as Australia and the United Kingdom. One study evinced that an alarming 61% of discharge summaries had at least one reconciliation error. What these studies revealed was that the use of pharmacists, multidisciplinary teams, and educational conferences can help aid in decreasing medication errors. The timeliness and accuracy of discharge summaries is essential in creating a seamless transition for a patient's care. This is especially important in patients with chronic conditions including pediatrics and geriatrics, which comprise the population most at risk of reconciliation errors. Patient demographic information including insurance status and locational preference for discharge are crucial to communicate and advocate for patient preference, and present an area of vulnerability that commonly can lead to litigation. Research shows that practitioner understanding is vital to the success of a discharge summary. Early integration on discharge summaries in medical school curriculums would allow for incoming residents to be confident in the facilitation of a successful discharge.

Methods: Implementation of standardized practices and precise communication are needed to augment the efficacy of modern day discharge summaries both between inter-facility transfers and home-based care. The goal of this program is to enhance medical students' comprehension of medical discharges, identifying essential elements within discharge summaries, and exploring how interdisciplinary team members can enhance the efficacy of discharge summaries. The program would consist of an educational slideshow that should take learners approximately 10 minutes to review. The next 30 minutes will include simulation exercises where case scenarios and patient profiles are presented. Learners will be paired in groups of 4 with at least one interprofessional healthcare member such as a pharmacist, care manager, and social worker to work on the case scenario and complete a discharge summary. The last 20 minutes will include a debrief with interprofessional health care members to discuss ways discharge summaries can be improved. Although this training is ideally suited for in-person small group settings, it will be designed for implementation in both in person and virtual settings.

Evaluation Plan: Through research and re-evaluation into what makes the transition out of one phase of health care to another, the curriculum of this educational material will need to be updated on a basis that includes current standard of practices. It would be vital to the success of this program to incorporate a multidisciplinary component where medical students would be able to work with pharmacy and nursing students as well as care managers and social workers to be able to understand the balance of teamwork required in a successful discharge.

While formal examination would not be needed to indicate a student has completed this discharge summary education, a certificate at the end of the training used to validate inclusion on a resume could be used for incoming residents to demonstrate their proficiency in the anatomy of a discharge summary. In a culture for patient-centered medicine, a certificate of completion in a training on discharges should be viewed positively by residency programs and future employers, which should serve as a secondary incentive to completing the training in addition to advocating for successful patient care during the time of transition.

Potential Impact: Poor discharge summaries may result in negative patient outcomes and substantial financial costs. Educating medical students about discharge summaries instills skills for efficient patient care and communication. This ensures future physicians can create thorough summaries that promote continuity, diminish medical errors, and improve patient care.

References:

- 1) Robelia PM, Kashiwagi DT, Jenkins SM, Newman JS, Sorita A. Information Transfer and the Hospital Discharge Summary: National Primary Care Provider Perspectives of Challenges and Opportunities. *J Am Board Fam Med.* 2017 Nov-Dec;30(6):758-765. doi: 10.3122/jabfm.2017.06.170194. PMID: 29180550.
- 2) Kind AJH, Smith MA. Documentation of Mandated Discharge Summary Components in Transitions from Acute to Subacute Care. In: Henriksen K, Battles JB, Keyes MA, Grady ML, editors. *Advances in Patient Safety: New Directions and Alternative Approaches (Vol. 2: Culture and Redesign)*. Rockville (MD): Agency for Healthcare Research and Quality (US); 2008 Aug. PMID: 21249900.
- 3) Gandara E, Moniz T, Ungar J, Lee J, Chan-Macrae M, O'Malley T, Schnipper JL. Communication and information deficits in patients discharged to rehabilitation facilities: an evaluation of five acute care hospitals. *J Hosp Med.* 2009 Oct;4(8):E28-33. doi: 10.1002/jhm.474. PMID: 19827041.

Teaching Test Kitchen: A Low-Stakes Environment for Teaching Development and Feedback

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Problem Statement: Lack of opportunities for educators to test or rehearse educational activities and receive feedback in real time from target audiences.

Rationale: The COVID-19 pandemic disrupted traditional methods of education delivery and pivoted teaching to virtual platforms (1). Teachers now need to address additional considerations in their educational sessions, including managing and utilizing technology. Medical education has also been moving away from traditional lectures towards a more student-centered pedagogy (2). In designing sessions focused on active learning, teachers must consider student engagement. Standard methods of receiving evaluation after the session (3) are less helpful as teachers desire feedback and input from students prior to implementing the sessions to ensure a smooth delivery.

Thus, we developed the Teaching Test Kitchen (TTK), inspired by America's Test Kitchen (TM), a cooking show where cooks prepare recipes while discussing how the recipe works or doesn't work. TTK connects teachers and learners ("testers") in a low-stakes environment to test educational activities and receiving immediate feedback.

Methods: TTK arranges "tests" where teachers can trial their educational session with volunteer testers.

Before the test: Teachers email TTK to request a test. They provide information including the general content of the session, learner level, and requested feedback, such as clarity of instructions, timing of activities, use of technology, etc. Testers from across the medical education continuum- students, residents, fellows, faculty, and staff- are recruited and the test is scheduled.

During the test: The teachers conduct their educational activity with the group of testers. Testers are asked to provide verbal feedback on the specific areas requested by the teacher and general feedback on the activity. Often, teachers choose to repeat and adjust certain portions of their activity in response to feedback, following short cycle Plan-Do-Study-Act (PDSA) processes in quality improvement.

After the test: Testers are asked to email the teacher with additional written feedback if applicable. Teachers are given the opportunity to schedule a follow up test if requested. Surveys were given to the teachers and testers to assess their satisfaction with the TTK. Teachers were also asked to rate their confidence in their teaching session before and after the TTK test. Both groups were asked if they would sign up to teach or test again with TTK.

Results: There were 6 tests completed by 4 different teachers (2 teachers participated in 2 different tests). 4 teacher surveys and 34 tester surveys were completed. Satisfaction was assessed using a 5-point Likert scale (1=very dissatisfied, 5=very satisfied).

Teacher results:

100% of teachers reported 5 for satisfaction with the value of the test and the value of the feedback. On the confidence scale from 0 to 100 (0= not confident; 100= very confident), teachers averaged a 29.6-point increase in confidence from before to after the TTK test. 80% of teachers stated they would use TTK again for another educational session.

Tester results:

94% of testers rated a 4 or 5 for satisfaction with the process of giving feedback. 94% also stated they were likely to sign up to be a tester again for TTK. A student commented "This is such an awesome idea! It is really nice to be able to give feedback on a lecture when you have 'no skin in the game' as you are

not being graded. I really liked being able to help improve the activity for my fellow classmates. Overall, this was a very positive experience and was honestly pretty fun.”

Potential Impact: Teaching Test Kitchen fills a gap in educational quality improvement, providing teachers with proactive, just-in-time feedback in a low-stakes environment. While TTK is meant to benefit the teacher, testers also reported high satisfaction and expressed appreciation for the opportunity to help the teacher and be involved in educational design.

References:

- 1) Sani, I., Hamza, Y., Chedid, Y., Amalendran, J., & Hamza, N. (2020). Understanding the consequence of covid-19 on Undergraduate Medical Education: Medical Students’ perspective. *Annals of Medicine and Surgery*, 58, 117–119. <https://doi.org/10.1016/j.amsu.2020.08.045>
- 2) McCoy, L., Pettit, R. K., Kellar, C., & Morgan, C. (2018). Tracking Active Learning in the Medical School Curriculum: A Learning-Centered Approach. *Journal of Medical Education and Curricular Development*, 5. <https://doi.org/10.1177/2382120518765135>
- 3) Constantinou, C., Wijnen-Meijer, M. Student evaluations of teaching and the development of a comprehensive measure of teaching effectiveness for medical schools. *BMC Med Educ* 22, 113 (2022). <https://doi.org/10.1186/s12909-022-03148-6>

Shocked Into Action: a Proposal for Simulation Use in Undergraduate Resuscitation Training.

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Idea: Utilising simulation technology alongside providing real cardiac arrest bleeps to medical students to enhance resuscitation experience and education.

Need: Although basic life support (BLS) skills are taught within medical curricula, research shows a minority of students perceive themselves as qualified enough to conduct BLS in a cardiac arrest (CA) (1). In-hospital CAs are highly stressful, attributable to many factors including acuity of specialised intervention and awareness of poor patient outcomes (2). Analysis of hospital CA survival rates and associated training programs found that hospitals with better CA outcomes prioritised hands-on learning, such as “mock codes” safely recreating stressful CA environments (2,3). A positive correlation was also noted between the number of CAs students observe and their confidence in partaking (1). Princess Royal University Hospital (PRUH) runs a “Bleep Week” (BW) program, where medical students carry bleeps alerting them to observe and safely take part in real CAs within the hospital. This scheme is part of King’s College London’s (KCL) “Transition to Foundation Year 1” block, bridging the gap between university and clinical practice. Initiating simulation alongside BW will provide students with high-fidelity opportunities to safely engage with stressful scenarios, thereby boosting confidence and knowledge in CAs, and better arrest outcomes

Methods: Final-year KCL students at PRUH participating in BW are the project's initial target learners, with the hope to expand to other KCL hospitals. Our preliminary 2022/2023 data highlighted that students felt more confident participating in future CAs just by observing them.

The goal of this project is to integrate simulation into BW, ensuring every student has direct experience with CA management prior to starting medical practice.

For the 2023/2024 induction, students will fill out a pre-BW questionnaire to assess baseline skills and confidence and will receive a tutorial on bleep practicalities, BW logistics and CA protocols. They will then undertake an observed CA simulation led by resuscitation officers and senior doctors, using ultra-realistic mannequins, and practise chest compressions, venepuncture and basic airway management. Learning points will be discussed.

Upon starting BW, students attend the daily multidisciplinary CA huddle to assign team roles and reflect on recent events. Students are given bleeps and will be alerted to CAs. If bleeped, they will attend the CA and participate within limits of comfort and competencies. In consideration of psychological safety, students can contact team leaders at any time.

At the end of BW, students debrief on the week’s events, fill out a post-BW questionnaire and participate in a formative Objective Structured Clinical Examination (OSCE) style exercise on CA scenarios, observed by senior teaching faculty.

Evaluation Plan: Qualitative free text data will be collected from transcribed briefing sessions and debriefing sessions. Student evaluation questionnaire data regarding perceived confidence with holding bleeps and attending CAs will be collected prior to, and after, BW. They will also be asked for their opinions on areas of improvement for future weeks. Both the quantitative data and qualitative data will be analysed with free text responses subjected to thematic analysis.

The pre-BW simulated CA and post-BW OSCE will assess post-programme confidence with, and understanding of, CA management, alongside broader skills including teamwork and human factors.

Students will be scored in multiple domains including clinical judgement and communication by several trained observers. Internal consistency will be assessed with Cronbach's alpha, while inter-rater reliability will be assessed with Cohen's kappa.

Overall pre-BW simulation and post-BW OSCE scores will be subjected to a t-test to assess for significance in improvement. This will allow us to assess the efficacy of the BW programme. It will additionally provide data to audit the scheme, with the aim of continuous development and improvement.

Potential Impact: CAs can be formidable scenarios in one's medical career. Early simulation exposure will better prepare students by boosting confidence levels. In addition, this scheme is a useful model with cross-setting potential for other medical schools to integrate practical resuscitation training into medical curricula, aiming to improve future CA outcomes.

References:

- 1) Freund, Y, Duchateau, F.X, Baker, E.C, Goulet, H, Carreira, S, Schmidt, M, et al. Self-perception of knowledge and confidence in performing basic life support among medical students. *European Journal of Emergency Medicine: Official Journal of the European Society for Emergency Medicine*. 2013. 20(3), 193–196. <https://doi.org/10.1097/MEJ.0b013e328355fd59>
- 2) Anderson, T.M, Secrest, K, Krein, S.L, Schildhouse, W, Guetterman, T.C, Harrod, M et al. Best Practices for Education and Training of Resuscitation Teams for In-Hospital Cardiac Arrest. *Circulation: Cardiovascular Quality and Outcomes*. 2021. 14(12). <https://doi.org/10.1161/CIRCOUTCOMES.121.008587>
- 3) Nallamotheu B.K, Guetterman, T.C, Harrod, M, Kellenberg, J.E, Lehrich J.L, Kronick, S.L et al. How Do Resuscitation Teams at Top-Performing Hospitals for In-Hospital Cardiac Arrests Succeed? *Circulation*. 2018. 138(2). 154-163. <https://doi.org/10.1161/CIRCULATIONAHA.118.033674>

From Trainee to Trainer - General Surgery Faculty Development Series

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Idea: Applying educational principles to surgical teaching to improve resident experience and education while encouraging professional identity formation.

Need: After graduating from formalized learning environments, self-directed education via continuing medical education courses tends to address innovations in medical practice. While this is appropriate for staying up to date on quality patient care, more effort must be placed into choosing courses for professional development. This is important because after decades of being learners, attendings must transition into being educators. The ACGME requires General Surgery (GS) faculty to pursue faculty development (FD) designed to enhance their skills at least annually as educators.¹ Furthermore there is increasing recognition that faculty need training in educational theories to teach effectively.^{2,3} An informal needs assessment of our GS faculty shows that most are interested in obtaining skills to become better educators with a focus on giving effective feedback and improving intra-operative teaching skills. Hospital sponsored courses are not specific to surgeons and do not sufficiently address these needs. We propose an interactive, in-person FD curriculum for general surgeons focusing on principles of education to introduce tools for diagnosing and engaging learners and to provide a safe space to practice their new skillset.

Methods: This faculty development series is geared towards GS faculty and will include 30-40 participants ranging from advanced beginner to competent learners. Over 5 weeks, participants will be invited to the weekly 1 hour, in-person session on the topics of (1) Principles of education, (2) Diagnosing your learners, (3) Effective feedback, (4) Intra-op teaching, and (5) Self-evaluation. Each session will consist of an attention grabber, skill builder, catalyst, and intensifier. The participants will be invited to brainstorm or answer audience polls prior to a PowerPoint presentation introducing the topic. This will be followed by an activity such as think pair share, case presentation, or jeopardy game to encourage active learning. Prior to the end of the session, all participants will be asked to make a commitment to act (CTA) and evaluate the session. Due to scheduling conflicts, we do not expect all faculty to attend every session. However, because each session builds on the previous week's content, a summary of the previous week's topic and content will be emailed to all GS faculty one day prior to the session.

Evaluation Plan: Participants will fill out a brief survey regarding their teaching experience and formal education training. All GS faculty will be invited to attend, and attendance will be tracked by the education coordinator. Participation in the sessions will be tracked through completion of in-session activities. After each session, participants will be asked to evaluate the effectiveness of the materials presented in achieving the objectives and complete a CTA, which will be compiled for each participant. Following participation in the series, participants will be asked to fill out a survey regarding the effectiveness of this curriculum in improving their knowledge of educational principles. They will also be asked to answer a multiple-choice quiz designed to evaluate acquisition of knowledge during the series. 3 months after completion of the curriculum, CTAs will be returned to the participants and a follow-up survey will assess if participants have been able to incorporate the concepts and skills they have learned into practice. If CTAs were not implemented, participants will be asked to identify what barriers lead to this outcome. A survey at 3 months will be sent to the residents to evaluate effectiveness of faculty teaching.

Potential Impact: Few GS faculty are formally trained in education, yet they are expected to teach the next generation of surgeons. A FD curriculum specific to general surgeons that introduces principles of education will not only equip faculty with tools to improve resident experience and education but will also encourage professional identity development.

References:

- 1) Acgme.org. 2022. ACGME Program Requirements for Graduate Medical Education in General Surgery. [online] Available at:
https://www.acgme.org/globalassets/pfassets/programrequirements/440_generalsurgery_2022.pdf
- 2) Steinert Y, Mann K, Centeno A, Dolmans D, Spencer J, Gelula M, Prideaux D. A systematic review of faculty development initiatives designed to improve teaching effectiveness in medical education: BEME Guide No. 8. *Med Teach*. 2006 Sep;28(6):497-526. doi: 10.1080/01421590600902976.
- 3) Steinert Y, Mann K, Anderson B, Barnett BM, Centeno A, Naismith L, Prideaux D, Spencer J, Tullo E, Viggiano T, Ward H, Dolmans D. A systematic review of faculty development initiatives designed to enhance teaching effectiveness: A 10-year update: BEME Guide No. 40. *Med Teach*. 2016 Aug;38(8):769-86. doi: 10.1080/0142159X.2016.1181851.

Evaluating the Effect of Learning Tools on Engagement in Medical School Humanities Courses

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Problem Statement: There is a paucity of research and evaluation methods to assess the impact of medical humanities courses on medical students' educational experience.

Rationale: The AAMC (AAMC, 2020) recommends enhancing the evaluation of courses that integrate arts and humanities into medical education and highlights the lack of theoretical models to drive these evaluation methods. This study investigates a method to assess the effect of learning tools on engagement in a medical humanities course. We modeled engagement as a function of participation and enjoyment of subject matter. Participation was a measure of student perception of accessibility, intent to attend, intent to encourage other students to attend, and curiosity in future sessions. Enjoyment of subject matter was a measure of student perception that the activity was worthwhile, enjoyable, contributed to their medical education and that it would benefit future students. The tools we assessed included STEP 1-style multiple choice questions, short response questions, a digital format (Google Forms), and individual and group activity structure.

Methods: This study was conducted as a randomized and single-blinded study with voluntary participation during the medical humanities course at California University of Science and Medicine. This study utilized the random separation of all students into 12 colleges with 10-11 students each. Six of these colleges were randomly selected to receive the intervention activity, and the other six colleges received the control activity. The control activity was the regular 1-hour small-group activity of the course, which included two cases on medical ethics, each followed by two open-ended questions for group discussion. The intervention activity adapted the control activity to include the learning tools. Four multiple-choice STEP-style questions were delivered in the first 10 minutes using Google Forms access by QR code, followed by 10 minutes of a group review of the correct answers with explanations. The remaining 40 minutes were allotted for the regular activity. Participants were asked to complete post-surveys with Likert-style questions and one open feedback question.

The pilot was delivered on May 17, 2023 to a cohort of year-one students in the class of 2026. Responses were insufficient, but feedback suggested improvements to the structure and delivery of the intervention. The second trial was delivered on August 16th, 2023, to a cohort of year-one students in the class of 2027. Data was analyzed for measures of central tendency and with a Mann-Whitney U Test.

Results: 48 students were surveyed (control N = 23, intervention N=25). A Likert scale was used with a scoring system of "disagree"=1, "somewhat disagree"=2, "neutral"=3, "somewhat agree"=4, and "agree"=5. Means for each response item were compared. Despite all interventions having a raw increase in engagement over control, we found a significant increase only in student perception that the activity was accessible at 40.49% (3.22 [2.84-3.59] vs 4.52 [4.30-4.74]; p-value = 0.0056, 95%), increase in enjoyment at 23.44% (3.43 [3.15-3.72] vs 4.24 [3.99-4.49]; p-value = 0.0147, 95%), increase in perception that the activity contributed positively to their medical education at 13.90% (3.65 [3.37-3.93] vs 4.16 [3.84-4.48]; p-value = 0.0324, 95%), and an increase in agreement that the next medical class would benefit from this activity at 22.67% (3.39 [3.09-3.69] vs 4.16 [3.86-4.46]; p-value = 0.0203; 95%). The aggregate mean for control (3.59) and intervention (4.12) indicates an overall increase in engagement of 15%. These results suggest only a significant increase in enjoying the subject matter, but not participation in the intervention group. The study would benefit from a larger sample and repeat delivery next year to preserve blindness. We also recognize Likert data is ordinal and without defined intervals. However, we chose to assign a scoring system to develop a quantitative assessment to assess the change in engagement with an intervention.

Potential Impact: Our study suggests evaluation strategies that model engagement can show the effectiveness of integrating medical humanities courses into medical school curricula through

engagement tools. This study identifies an actionable step for other curriculum developers to evaluate course engagement.

References:

- 1) Howley L, Gauferberg E, King B. The Fundamental Role of the Arts and Humanities in Medical Education. Washington, DC: AAMC; 2020

An Online Student Primary Care Clinic: a Novel Case-Based Approach to Board Preparation

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Idea: An online case-based Primary Care Clinic to prepare medical students for passage of COMLEX Level 1 and/or USMLE Step 1 board examinations.

Need: Medical education pedagogy is constantly evolving to optimize students' ability to absorb the plethora of information presented in the preclinical years. Use of an online case-based clinic provides students clinical applications for the material being taught. This model is advantageous in creating capable physicians and fostering life-long critical thinking. When compared to problem-based learning (PBL), case-based learning (CBL) provides students a structured approach to solving patient problems. The benefit to this approach includes more time actively applying knowledge and distinct assessment to gauge progress. (1) Also, a CBL approach provides students a meaningful way to connect their basic science material to clinical conditions, which is ultimately the goal when sitting for Level 1 or Step 1. (2) While medical school education regularly includes aspects of CBL, most board preparation strategies involve multiple choice questions and passively watching videos. Evidence shows that students who perform highly on USMLE Step 1 are those who use interactive material. (3) The goal in creating the case-based Primary Care Clinic is to offer a resource that fills the CBL space and delivers an interactive platform needed for success.

Methods: Medical students are introduced to 120 patients in a case-based format with conditions ranging from atopic dermatitis to heart failure to neonatal respiratory distress syndrome. Each of the 120 patients will eventually "return to the clinic" four more times with a new condition for a total of 600 patient visits providing students an opportunity to experience patient continuity. The patient cases utilize a module approach in which students are presented with a "Meet your Patient!" vignette as an introduction to the case. This vignette includes the patient's name, age, sex, and additional information pertinent to the patient's office visit. This often includes the history of present illness, past medical history, physical exam findings, and some preliminary laboratory and diagnostic findings. Students then complete modules that comprehensively explain the basic science and clinical underpinnings of the condition to help tie the case together. Within each module are multiple choice and open-ended questions to allow students to utilize critical thinking skills and assess their competency with the material. The breadth and depth of the clinical cases ensures complete coverage of essential board-relevant basic science and clinical applications, assures students that they have been assessed in nearly all possible ways, and most importantly gives them a memorable patient with which to connect their clinical experience.

Evaluation Plan: Preliminary launch of this project focused primarily on student confidence associated with completing the Student Primary Care Clinic and predicted performance on COMLEX Level 1 or USMLE Step 1 board examination. Surveys were administered prior to beginning the program and will be sent every semester to continually gauge student feelings towards the program and its benefits to student confidence. The online platform tracks student usage and successful completion of practice questions and will allow for further evaluation of usage and students' board exam performance.

Potential Impact: The Student Primary Care Clinic is built into an accessible online platform. The expectation is that bringing together the multitude of information learned over the medical students' preclinical years into a more memorable and personalized CBL approach will improve performance on board examinations and create lifelong learners.

References:

- 1) McLean. Case-Based Learning and its Application in Medical and Health-CareFields: A Review of Worldwide Literature. *Journal of Medical Education and Curricular Development* 2016;3 39–49
doi:10.4137/JMECD.S20377.

- 2) Gade, S., & Chari, S. (2013). Case-based learning in endocrine physiology: An approach toward self-directed learning and the development of soft skills in medical students. *Advances in Physiology Education*, 37(4), 356–360. <https://doi.org/10.1152/advan.00076.201>
- 3) Bonasso P, Lucke-Wold B 3rd, Reed Z, Bozek J, Cottrell S. Investigating the Impact of Preparation Strategies on USMLE Step 1 Performance. *MedEdPublish*. 2015;4(1):5. doi: 10.15694/mep.2015.004.0005. Epub 2015 Nov 2. PMID: 27500163; PMCID: PMC4975378

Eye-Tracking During CVC Placements: Assessing an Objective Measurement for Performance.

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Idea: Evaluation of trainee procedural performance lacks the objective feedback needed to facilitate measurable improvement.

Need: Current methods for assessing trainee performance during Central Venous Catheter (CVC) placements rely on subjective evaluations or checklists. The majority of published research assesses trainee performances in simulated settings and likely overlook crucial aspects that can only be measured during actual clinical care. Despite a specific scoring system for ultrasound-guided CVC placement, the results of the Gaber Scoring System are driven by how fast a trainee can place a central line and less on actionable performance measures.² First-person video recording with eye-tracking capabilities presents a promising avenue for objective performance evaluation. Previous studies have reported gaze differences between experts and novices during simulated medical procedures.³ The details of these differences as a reliable source for performance assessment, particularly in perioperative CVC placement, remain limited. This study examines gaze data disparities between experts and trainees during actual perioperative CVC placements using eye-tracking technology with the aim of correlating gaze findings with established performance assessment scores, thereby enhancing the objectivity and reliability of trainee evaluation during CVC placements.

Methods: In this single-center, prospective, non-interventional study, all consecutive Clinical Anesthesia (CA) residents during their cardiac anesthesia rotation and cardiac anesthesia faculty were eligible for participation. Exclusion criteria were corneal conditions. During CVC placement, participants wore Tobii Pro Glasses 3 (Tobii Pro, Danderyd, Sweden) calibrated per manufacturer guidelines. Recordings captured the entire CVC placement, with or without a pulmonary artery catheter (PAC) placement. A single trained operator performed pre-defined time markings and manual schematic Area of Interest (AOI) mapping during the time between the ultrasound (US) scan of the neck and catheter advancement using Tobii Pro Lab Analyzer software. A second operator reviewed each mapping for accuracy. AOIs included the ultrasound screen and procedural field defined as the insertion site, US probe, and syringe. This exploratory study did not limit the sample size.

Evaluation Plan: We collected and mapped 81 recordings: 69 from anesthesia residents, 12 from cardiac anesthesia faculty. As expected, total time for CVC placement and the time from the initial neck US neck scan and skin puncture was inversely proportional to level of training and experience. Eye tracking technology also revealed significant differences in gaze time and the number of times participants changed their gaze between the US screen and the procedural field at the time of CVC placement. To correlate these findings with currently available performance assessment tools, two blinded raters will score each video recording using the Objective Structured Assessment of Technical Skills (OSATS) and the Gaber Score. We also plan to assess stationary and transitional gaze entropy. Ultimately, and based on our forthcoming results, we aim to develop an objective tool for assessing trainee performance that can be used to deliver immediate, point-of-care feedback.

Potential Impact: First-person video with eye-tracking capabilities could be an objective adjunct to currently available performance metrics for CVC placements, and potentially contribute to EPAs evaluations. Correlating gaze metrics with assessment scores can enhance trainee evaluation and feedback, and facilitate safer, more efficient procedures.

References:

- 1) Lord JA, Zuege DJ, Mackay MP, des Ordon AR, Lockyer J. Picking the Right Tool for the Job: A Reliability Study of 4 Assessment Tools for Central Venous Catheter Insertion. *J Grad Med Educ.* Aug 2019;11(4):422-429. doi:10.4300/jgme-d-19-00107.1

- 2) Gaber S, Yehia A, Nabil B, Samir A. Central Venous Catheter Insertion: A Scoring System for Evaluation of Both the Procedure and the Operator (CVCI Score/Gaber Score). *Critical Care Research and Practice*. 2020/11/04 2020;2020:8156801. doi:10.1155/2020/8156801
- 3) Chen H-E, Yovanoff MA, Pepley DF, et al. Evaluating Surgical Resident Needle Insertion Skill Gains in Central Venous Catheterization Training. *Journal of Surgical Research*. 2019-01-01 2019;233:351-359. doi:10.1016/j.jss.2018.07.040

Assessing the Impact of Clinical Continuity in Uninsured Patients with Chronic ConditionsZagloul, Maie; Mohammed, Buruj; Khan, Baila; Young, Staci
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Problem Statement: The project looks to assess the impact of clinical continuity in uninsured patients with chronic conditions.

Rationale: Continuity of care has been shown to improve long-term health outcomes. Uninsured patients are typically unable to receive long-term care and rely on free clinics to address gaps in their healthcare. Many free clinics, however, are dependent on a revolving door of volunteers – with a high-turnover rate – thus impacting the care this patient population receives. The Saturday Clinic for the Uninsured (SCU), is a student-led clinic established in Milwaukee, serving a vulnerable patient population. In order to address this disparity, SCU implemented a Clinical Continuity Track (CCT) program for high-risk patients diagnosed with multiple chronic conditions. This program aims to provide individualized, patient-centered care and matches patients with student doctors to act as an advocate and provide continuity; the patient sees this student doctor for routine follow-up visits and monthly check-ins between appointments.

Methods: There are a total of 34 patient enrolled in the CCT program. Patient Satisfaction Survey questions were created centered around patient experience, medication adherence, willingness to pursue student doctor recommendations, and comfort and confidence in patient care. Answers on comfort and confidence were scaled on a 5-point Likert scale. The survey also included a free-response question to gather any comments or concerns CCT patients had.

This survey was conducted through Qualtrics but provided over the phone. The responses collected on Qualtrics excluded patient identifiers. Prior to conducting the survey, the purpose of this study was explained, confidentiality was discussed, and a verbal consent was obtained to continue and document responses.

Results: Overall, our patient satisfaction survey demonstrated increased comfort and confidence in CCT patient healthcare, as well as a positive impact on health behaviors. Of the 34 patients enrolled in CCT, 20 individual patient surveys were completed.

A total of 77% of CCT respondents stated that they never miss their medications, with 47% of them attributing taking their medications more regularly to their enrollment in CCT. About 95% of CCT patients stated that they have made lifestyle changes to improve their health and well-being, with 86% of patients attributing their CCT enrollment to helping them make those changes. About 85% of CCT patients felt that the overall quality of their healthcare has improved since CCT enrollment.

When asked to rate how strongly they agree to statements on patient comfort and confidence on a 5-point Likert scale, respondents rated an average of 4.67 when asked if they feel that their healthcare needs are being better understood by their healthcare team at the clinic. Moreover, CCT patients rated an average of 4.76 when asked if they feel more comfortable discussing details of their health and wellness with their healthcare team. Respondents marked an average of 4.52 when asked whether they feel that they are better able to access care, lab and imaging tests, medications, or treatment for their health needs as a result of enrolling in CCT.

Potential Impact: This project indicates that a clinical continuity program increases confidence among patients in the healthcare they receive. Further research should explore the impact of this program on long-term health outcomes.

References:

- 1) Jackson, C., & Ball, L. (2018). Continuity of care: Vital, but how do we measure and promote it?. *Australian journal of general practice*, 47(10), 662–664. <https://doi.org/10.31128/AJGP-05-18-4568>

Values Based Medicine: A Professional Identity Formation Seminar for Medical Students

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Idea: Our longitudinal course for medical students includes individual reflection and group processing of professional identity formation (PIF).

Need: The clerkship year within undergraduate medical education (UME) is often the first immersive experience in which medical students are exposed to the rules and rewards of being a trainee, social norms, and values and beliefs of residents, attendings, and the medical system at large. It is a time when one faces complex interpersonal interactions and challenging patient cases that prompt reflection on one's values. As such, clerkship year holds the possibility of significant professional identity development and of dissonance between one's values and their perception of the values of the medical system or those around them. For medical students, this dissonance may be compounded by external stressors such as consistent academic evaluation, possible isolation from support networks, and financial stress. Research suggests that healthcare providers feel psychological distress and professional dissatisfaction when they feel they are working within a system that holds values dissonant with their own¹. Given the unfortunate trend of worsening mental health for many medical students throughout their UME years², explicitly supporting students through the process of PIF has emerged as an important goal within undergraduate medical education³.

Methods: We have developed a longitudinal course for medical students in their clerkship year that incorporates formal education on the topic of professional identity formation, reading and analysis of narrative medicine pieces related to PIF, and individual and group reflection on participants' experience of PIF. The goals of the course will be to support participants in identification of their professional values and processing of the ways in which those values are consistent with, or held counter to, the values they see within clinical medicine. Tools and strategies from therapeutic modalities, such as dialectical behavior therapy (DBT), will be presented to students to aid in their ability to communicate effectively in the face of challenges to their values within their clinical work. The course is integrated into the Primary Care Population Medicine track at the Warren Alpert Medical School of Brown University and currently, in its first year, has 16 student participants and two faculty facilitators. The course includes 9 sessions held longitudinally throughout the clerkship year. Facilitators with a background in psychology and psychiatry will help to lead the didactic content and reflection in order to support participants and monitor for significant distress or unintentional harm.

Evaluation Plan: Our study will utilize post-course self-report surveys, including both quantitative and qualitative questions, to evaluate students' a) understanding of their own professional identity formation, b) perceived abilities to process their emotional responses in instances when their values are challenged in their clinical work, and c) confidence in communicating effectively with colleagues and supervisors in the face of such challenges. Our study will also include a qualitative analysis of themes within a students' Professional Identity Essay which will be written as a reflection at the end of the course. The course will also be evaluated through the standard evaluation portal used for all courses at the Alpert Medical School, with this feedback being available to course leaders upon completion of the course.

Potential Impact: We hypothesize that clerkship year medical students will grow in their ability to identify their closely held professional values and communicate effectively with colleagues when these values are challenged within their clinical work, thus reducing the potential for moral injury or burnout.

References:

- 1) Agarwal SD, Pabo E, Rozenblum R, Sherritt KM. Professional Dissonance and Burnout in Primary Care: A Qualitative Study. *JAMA Intern Med.* 2020 Mar 1;180(3):395-401. doi: 10.1001/jamainternmed.2019.6326. PMID: 31904796; PMCID: PMC6990959.

- 2) Dyrbye LN, Thomas MR, Shanafelt TD. Medical student distress: causes, consequences, and proposed solutions. *Mayo Clin Proc.* 2005 Dec;80(12):1613-22. doi: 10.4065/80.12.1613. PMID: 16342655.
- 3) Cruess RL, Cruess SR, Boudreau JD, Snell L, Steinert Y. Reframing medical education to support professional identity formation. *Acad Med.* 2014 Nov;89(11):1446-51. doi: 10.1097/ACM.0000000000000427. PMID: 25054423.

An Analysis of ACGME Resident Well-Being Survey Validity

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Problem Statement: The validity of the annual ACGME Well-Being Survey is uncertain.

Rationale: Burnout research shows that the prevalence of burnout may peak during medical education, including medical school and residency, indicating a stronger need for change within the construct of graduate medical education. While the Accreditation Council of Graduate Medical Education (ACGME) provides a yearly survey to evaluate burnout symptoms in residency, the objective of this study is to evaluate the validity of this ACGME Well-being survey by correlation with scores on the Maslach Burnout Inventory Human Services Survey for Medical Personnel (MBI-HSS (MP)), as well as to compare both surveys against validated inventories of depression.

Methods: Fifty-one residents in adult neurology, child neurology, and adult psychiatry at the University of Kentucky in 2019 were identified for administration of the MBI-HSS (MP), the PHQ-9, and the 2018-2019 ACGME Well-Being Survey questions. The sum of each individual's scores for question subsets were then obtained and converted as percentage of the total participants, labeled as low, moderate, and high (as dictated by the scoring manual for the MBI-HSS-MP). Additionally, median scores across all participants for each question subset was utilized, with median scoring being implemented to minimize the effect of extreme outliers. To identify a more-than-singular prevalence, a cut-off score of greater-than-or-equal-to-three was implemented. The questions of the ACGME Well-being Survey were subdivided to evaluate Emotional Exhaustion, Personal Accomplishment, and Depersonalization. As the ACGME Well-being Survey utilized four-point Likert Scale Scoring (i.e., 1= strongly agree, 4= strongly disagree) to identify a more-than-singular prevalence, a cut-off score of greater-than-or-equal-to-three was implemented. Median scores for each burnout subset of questions were obtained, and total percentage of residents endorsing each burnout symptom were then tallied.

Results: Out of 51 participants, there was a 56.8% response rate for a total of N = 29. 68.9% (20/29) of participants taking the MBI had emotional exhaustion, compared to 72.4% (21/29) on the ACGME survey. 75.9% (22/29) of participants rated moderate to high personal accomplishment on the MBI, compared to 93.1% (27/29) on the ACGME survey. 65.5% (19/29) of participants rated moderate to high levels of depersonalization on the MBI, compared to 17.2% (5/29) of participants on the ACGME. 37.9% (11/29) met criteria for mild depression, 10.3% (3/29) for moderate depression, and 3.4% (1/29) for severe depression. Thus, while emotional exhaustion appears equal between both surveys, the validated MBI survey shows a lower level of personal accomplishment and higher level of depersonalization compared to the ACGME survey. Additionally, 51.6% of residents endorsed positive symptoms of depression.

Potential Impact: Although both surveys can be used to address resident well-being, a more validated evaluation by the ACGME would provide a clearer answer to understand and thus better treat burnout in this population.

References:

- 1) Hull SK, D. L. (2008). Prevalence of health-related behaviors among physicians and medical trainees. *Acad Psychiatry*, Jan-Feb;32(1):31-8.
- 2) Thun-Hohenstein L, H.-A. C. (2021). Burnout in medical students. *Neuropsychiatr*, Mar;35(1):17-27.
- 3) Rodrigus H, C. R. (2018). Burnout syndrome among medical residents: A systematic review and meta-analysis. *PLoS One*. eCollection 2018, Nov 12;13(11).

ZotUnity: Enhancing Cohesion in Education, Wellness, and Advising Through a House-Based System

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Problem Statement: Disconnected medical student service programs can disrupt students' learning experiences and overall wellness.

Rationale: The University of California, Irvine, School of Medicine (UCISOM) traditionally offered resources through separate channels such as the peer mentor program, tutoring program, "big sib" program, and career advising. However, blended learning, incorporating both face-to-face and e-learning, has consistently demonstrated more positive effects on knowledge outcomes in health education, as compared to traditional learning (1). Moreover, merging innovative tutoring with peer mentorship enhances student satisfaction (2) and facilitates essential physician skills (3). Therefore, ZotUnity was designed as an integrated approach to address the gaps by unifying these resources under an umbrella framework that encourages transparency, clarity, and unity. As medical education continues to evolve, it is imperative to adapt to the growing needs of our student body by creating an integrated and creative program that incorporates wellness, advising, and academic tutoring.

Methods: A group of UCISOM students conducted a "climate" survey to identify the student body's attitudes towards the current programming structure. Questions such as "I feel connected with students from other years," "I am satisfied with the current wellness model," and "I can easily identify upperclassman as mentors" were intended to assess the domains of community, wellness, and mentorship. Survey responses revealed a disjunction between the many programs at UCISOM. Ultimately, we met with the school's administration and presented an innovative and integrative new system that would encapsulate all medical students, including those on a leave of absence.

The ZotUnity system constitutes six houses (Artemis, Vulcan, Panacea, Apollo, Lonopuha, and Sekhmet) composed of students from all class levels to encourage interclass community while incorporating career advising, peer tutoring, wellness advising, and mentorship. Each house has an assigned faculty career advisor, two House Directors, and 8-10 medical student tutors (part of the Collaborative Learning Communities with Medical Students as Teachers program). This system fosters a sense of community and collaboration through wellness activities, academic guidance, and mentorship through a multitude of tutoring and advising modalities.

Results: A total of 235 UCISOM students responded to the climate survey between December 2022 and January 2023 (response rate ~50%). All questions, excluding basic demographics, utilized a 1-5 Likert scale with a "1" indicating "Strongly Disagree" and a "5" being "Strongly Agree." 188 (80%) students agreed that they felt connected with classmates of the same year, but 150 (64%) students disagreed with feeling connected to students within different years. 197 (84%) students wished for more opportunities to relate to students in other years. 79 (43%) were satisfied with the current peer mentorship structure and 80 (42%) were satisfied with the current wellness model.

After a year of intensive planning, we launched ZotUnity. More than half of the school, 330 students, participated in an exciting day of games, sports, food, and bonding activities as the six houses sought to win the ZotUnity House Cup. Naomie Devico, House Director for Artemis, remarked on Launch Day as "...such a phenomenal way to introduce our new first-year students to our community and have a day dedicated to making connections, identifying all of our programming so it's accessible to all, and providing guidance to the classmates below us." Since Launch Day, UCISOM students have participated in exam review sessions and small-group reviews with their respective house tutors, house bonding

activities, including hikes, mini golf and bonfires, and met with career advisors to identify goals for professional development.

Potential Impact: ZotUnity offers a comprehensive and integrated program addressing the multifaceted needs of the medical school journey. While uniting all 500 students remains challenging, ZotUnity's design fosters unity by enhancing resource accessibility, promoting active school involvement, and nurturing a community spirit through its house-based framework.

References:

- 1) Vallée A, Blacher J, Cariou A, Sorbets E. Blended Learning Compared to Traditional Learning in Medical Education: Systematic Review and Meta-Analysis. *J Med Internet Res.* 2020;22(8):e16504. doi:10.2196/16504
- 2) Farkas AH, Allenbaugh J, Bonifacino E, Turner R, Corbelli JA. Mentorship of US Medical Students: a Systematic Review. *J Gen Intern Med.* 2019;34(11):2602-2609. doi:10.1007/s11606-019-05256-4
- 3) Tai J, Molloy E, Haines T, Canny B. Same-level peer-assisted learning in medical clinical placements: a narrative systematic review. *Med Educ.* 2016;50(4):469-484. doi:10.1111/medu.12898

Mental Illness Stigma & Help-Seeking Activity for Medical Student Collaborative Learning Groups

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Problem Statement: Like the patients they serve, many medical trainees experience burnout, anxiety, and depression but do not seek help, despite available resources.

Rationale: Patients who experience symptoms of depression and anxiety often do not receive adequate mental health services. Mental illness stigma creates barriers, including delays in help-seeking, discontinuation of treatment, suboptimal therapeutic relationships, patient safety concerns, and poorer quality care (1). Many medical trainees and physicians also experience depression, anxiety, and burnout (2), though fewer medical trainees would seek professional help than would the general population (2), despite around 1/4 of students reporting increased mental healthcare needs during medical school (3). In fact, only 1/3 of medical students experiencing burnout actually seek help (2), due primarily to fear of discrimination from peers, supervisors, and residency directors (2). Thus, it is important to teach students skills to promote help-seeking for themselves and their patients. Medical schools can promote student well-being with targeted wellness activities embedded in the curriculum (3).

Methods: Our IRB-approved, interactive module introduces mental illness stigma and help-seeking and is applicable for medical students at any stage in their training. Our target population was first-year medical students at the University of Florida College of Medicine. The 1-hour long activity occurred in Collaborative Learning Group (CLG) meetings, which are small groups of 8 students and one faculty leader that meet weekly during the first 2 years of medical school. In 2020, 2021, and 2022, a total of 433 first year medical students completed this activity. Objectives included: 1) describing and personalizing the importance of help-seeking in promoting wellbeing; 2) describing and personalizing the concept of mental illness stigma; 3) identifying the consequences of stigma in patient care and medical student/physician health, specifically concerns about help-seeking; 4) identifying occupational risks of medical training and practice on mental health. Our module includes: 1) 2 pre-class readings 2) in-class empathy exercise; 3) completion of the Opening Minds Scale; and 4) article discussion. Responses from an anonymous post-session Qualtrics survey were analyzed to assess student satisfaction, learning, and intent to change behavior. The survey also gave students an opportunity to provide feedback and suggestions regarding the module.

Results: The post-activity evaluations were anonymously completed online via Qualtrics by the 2020, 2021, and 2022 student cohorts. The surveys consisted of questions assessing student satisfaction with the overall activity, with each component rated on a 5-point Likert scale (1=terrible, 5=excellent), and likelihood of recommending the activity to future students. Additionally, in 2022, three open-ended questions were added to allow students to state how they planned to personally apply the session material as they progress in their career, how they planned to apply the material to improve patient care, and to provide feedback on how to improve the activity. The pilot data from 2020 were used to improve the activity. In 2022, 74/135 medical students completed the survey and 62 gave permission to use their responses, compared to 74/163 students who gave their permission in 2021. The overall rating of the activity was 4.42/5 in 2021 (SD=0.59) and 4.32/5 in 2022 (SD=0.69). Average component ratings based on 2021 and 2022 data were as follows: the empathy activity received a 4.3/5, completion of the Opening Minds Scale and discussion received a 4.2/5, and group discussion of the assigned pre-readings received a 4.3/5. In total, 94% of participants from 2021 and 2022 (n=128) said they would recommend this activity for students in the future. Written feedback offered minor suggestions to improve the session for future students.

Potential Impact: Required wellness modules can promote well-being among medical students. This study indicated that students appreciate having a space to have open discussions about mental

healthcare. Promoting wellness for medical students can have a positive impact on help-seeking for themselves and their colleagues, but also for their future patients.

References:

- 1) Knaak, S., Mantler, E., & Szeto, A. (2017). Mental illness-related stigma in healthcare. *Healthcare Management Forum*, 30(2), 111–116. <https://doi.org/10.1177/0840470416679413>
- 2) Dyrbye LN, Eacker A, Durning SJ, Brazeau C, Moutier C, Massie FS, Satele D, Sloan JA, Shanafelt TD. The Impact of Stigma and Personal Experiences on the Help-Seeking Behaviors of Medical Students With Burnout. *Acad Med*. 2015 Jul;90(7):961-9. doi: 10.1097/ACM.0000000000000655. PMID: 25650824.
- 3) Gold JA, Johnson B, Leydon G, Rohrbaugh RM, Wilkins KM. Mental health self-care in medical students: a comprehensive look at help-seeking. *Acad Psychiatry*. 2015 Feb;39(1):37-46. doi: 10.1007/s40596-014-0202-z. Epub 2014 Aug 1. PMID: 25082721.

Tackling Self Doubt: A Program to Build Confidence for URIM Students Applying to Medical School.

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Problem Statement: There is a lack of confidence amongst premedical students from groups underrepresented in medicine (URiM) aiming to pursue a career in medicine.

Rationale: As the US becomes increasingly diverse, Black and Latinx individuals make up 13.6% and 19.1% of the US population, respectively (1). However, Black and Latinx physicians only comprise 5% and 5.8% of the active US physician workforce (2). It is vital to increase diversity in the physician workforce in order to reduce healthcare disparities and improve patient outcomes (3). PRIME Academy is a 1-week summer program designed to teach URiM premedical students about the medical school application process, networking, health equity, and different medical specialties. PRIME Academy's objective is to give these students the information and tools needed to successfully apply to medical school, join the physician workforce, and address the needs of underserved Latinx, African, Black, and Caribbean communities.

Methods: Our project targeted premedical students who are underrepresented in medicine and interested in entering the medical field. The aim was to increase the confidence these students have in pursuing medicine as a career. To accomplish this, we ran a weeklong summer program (PRIME Academy) for URiM premedical students, with the intention to help prepare students for the medical school application process and a career in medicine. The program consisted of multiple sessions, with categories of the sessions ranging from health equity, confidence building, and medical education, to skills required to successfully matriculate into medical school. We held this program at the University of California, Irvine School of Medicine, and utilized various physician and medical student volunteers to provide our students with an immersive experience in the medical education system. During the week's first session, we asked students to complete an anonymous pre-survey via Qualtrics, which included questions about their confidence in applying and matriculating into medical school. During our last session of the week, students completed an anonymous post-survey, assessing how prepared and confident they felt to pursue a medical career after participating in the program. Questions were assessed on a 5-point scale (Extremely confident = 5, Extremely unconfident = 1) to quantify the responses for analysis. Analysis was then completed using a two-tailed T-test.

Results: Thirty-two students attended the PRIME Summer Academy in July 2023. Thirty-one students completed the pre-survey, and thirty-two students completed the post-survey. Eighty-four percent of students in the academy identified themselves as disadvantaged. Confidence building was measured through 3 questions, including assessing confidence in becoming a physician, navigating the application process, and finding/maintaining a mentor. Statistical analysis was conducted using a two-tailed T-test. Confidence in becoming a physician pre-survey score averaged 4.06 ± 0.58 , and post-survey score averaged 4.47 ± 0.57 . Confidence in navigating the medical school application process pre-survey score averaged 3.06 ± 1.03 , and post-survey score averaged 4.34 ± 0.60 . Confidence in finding and maintaining a mentor pre-survey score averaged 3.45 ± 1.12 , and post-survey score averaged 4.28 ± 0.77 . While improvement was seen in scores for all three questions, there was not a significant difference between pre-and post-survey for confidence in becoming a physician ($p=0.148$). However, there was a significant difference between pre-and post-survey scores for confidence in the medical school application process ($p<0.001$) and finding a mentor ($p<0.01$). Overall, this intervention significantly improved student confidence in 2 out of 3 metrics, suggesting it is an effective approach.

Potential Impact: Initiatives like PRIME Academy are crucial. Their potential impact is manifold: fortifying the aspirations of URiM premedical students, addressing physician diversity deficits, and

ultimately, enhancing patient care in underserved communities. These outcomes suggest that the PRIME Academy model can be a successful approach in fostering this change.

References:

- 1) US Census Bureau. Quick facts, United States. Accessed September 28, 2023. <https://www.census.gov/quickfacts/fact/table/US/PST045219>
- 2) Association of American Medical Colleges. Figure 18. Percentage of all active physicians by race/ethnicity, 2018. Accessed September 28, 2023. <https://www.aamc.org/data-reports/workforce/interactive-data/figure-18-percentage-all-active-physicians-race/ethnicity-2018>
- 3) Jetty A, Jabbarpour Y, Pollack J, Huerto R, Woo S, Petterson S. Patient-Physician Racial Concordance Associated with Improved Healthcare Use and Lower Healthcare Expenditures in Minority Populations. *J Racial Ethn Health Disparities*. 2022 Feb;9(1):68-81. doi: 10.1007/s40615-020-00930-4. Epub 2021 Jan 5. Erratum in: *J Racial Ethn Health Disparities*. 2021 Feb 24;: PMID: 33403653.

Exploration of an Academic Planner Designed to Reduce Burnout in Medical Students

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Idea: An academic planner for medical students: Sept-Aug format; History and examination crib sheets; Revision tips to promote wellbeing and study strategies.

Need: Widespread burnout in medical students across UK and globe

Helps students organise time to achieve work/life balance

Crib sheets to support knowledge on clinical placement, for easy referral if internet access is limited

"Guide book" to raise awareness of different study strategies to students

Help students recognise early signs of burn out

Learning resource that is not exam-orientated but student-focused with reminders to take breaks and highlight triggers for psychological distress

Methods: Ethical considerations:

Is the prototype advantageous to students?

Where has the information come from?

Opportunity to withdraw

Sensitive topics discussed around placement/campus learning experience

?

Target learners: 25 MBChB Leeds university medical students in "clinical years", observational placements in hospital and GP

Goal: ascertain how medical students respond to academic planners, gain "customer" perspective of prototype

Length: 7 months (Jan-July 2023)

Collected data from: market research via online semi-structured interviews

Analysis: Deductive thematic analysis

Interactive methods: students collected and used prototype for half of academic year, market research analysis testing.

Evaluation Plan: Remodel prototype based on results of market research study.

Evaluate barriers to student purchasing, i.e. willingness to pay price point, product visibility

Currently processing data but provisional findings show potential for the planner to be designed into an offline app for students to access. Students preferred the idea of a paper planner with an accompanying app to reflect the experience of hybrid learning.

Potential Impact: Scope for an online/offline app? Pioneering study on product from medical students' perspective? Contributes to medical student stress literature? Address non-clinical aspects that affect the learning experience: loneliness, student networking, settling into university?

References:

- 1) Arndt, H. and Rose, H., 2022. Capturing life as it is truly lived? Improving diary data in educational research. *International Journal of Research & Method in Education*, pp.1-12.
- 2) Parekh, R., Jones, M.M., Singh, S., Yuan, J.S.J., Chan, S.C.C., Mediraa, S., Smith, R., Gunning, E., Gajria, C., Kumar, S. and Park, S., 2021. Medical students' experience of the hidden curriculum around primary care careers: a qualitative exploration of reflective diaries. *BMJ open*, 11(7),p.e049825.
- 3) Nevalainen, M.K., Mantyranta, T. and Pitkala, K.H., 2010. Facing uncertainty as a medical student—a qualitative study of their reflective learning diaries and wrings on specific themes during the first clinical year. *Patient education and counselling*, 78(2), pp.218-223.

Improving Medical Nutrition Education for a Healthier Future: Evidence-Based Recommendations

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Idea: Development and implementation of evidence-based recommendations for nutrition education to improve the health of medical students and patients.

Need: Effective training in nutrition is foundational to medical education and creating an equitable healthcare system. Nutrition plays a critical role in disease prevention as well as individual and population health; the estimated burden of nutrition-associated chronic conditions is significant and disproportionately affects already-disadvantaged populations. Current nutrition education is inadequate; medical students and physicians alike think counseling patients on nutrition is an important physician role, yet feel unprepared to do so [1]. Nutrition education can cause harm to patients and students alike. It can perpetuate weight bias, which is prevalent among medical students and professionals, and causes well-documented harm to patients by impacting patient and provider behavior and via the physiological effects of experiencing stigma [2,3]. Nutrition education can contribute to the development of disordered eating patterns, which are common among medical students. The omission of social determinants of diet leads to ineffective advice that can alienate patients. We recommend reexamining how nutrition and weight are discussed throughout medical training to address these problems.

Methods: We formed a team including a medical student, psychiatrist, and basic scientist to evaluate our existing nutrition curriculum; reviewed the literature and developed evidence-based recommendations for how to improve it; and worked with other faculty to implement changes and evaluate their effects. We are a regional campus that primarily serves pre-clerkship medical students, and focused our efforts on this part of our curriculum, although the recommendations we developed apply to undergraduate, graduate, and continuing medical education. We reviewed the literature on medical nutrition education; We reviewed our institution's explicit and silent curriculum on nutrition and weight, and gathered perspectives from students with eating disorders. We examined materials from widely-used, reputable sources such as the American Heart Association, CDC, and U.S. Department of Agriculture's Dietary Guidelines for Americans. We identified ways of thinking and communicating that exacerbate, rather than address, problems relating to weight stigma, disordered eating, and social determinants of health. We developed alternatives that are evidence-based, patient-centered, and respectful of diverse experiences and circumstances. We have begun implementing changes in our curriculum (e.g. didactic sessions, cases) and working with faculty across our fully integrated, organ system-based two-year curriculum to get buy-in for and implement changes more broadly.

Evaluation Plan: Evaluation of these changes and their impact on students' nutrition knowledge, communication skills, and understanding of weight stigma and its implications for clinical practice will consist of several elements. 1) Tracking changes made across our integrated curriculum e.g. didactic sessions, revisions to cases used for small-group case-based learning, which forms the centerpiece of our pre-clerkship curriculum. 2) Student satisfaction and suggestions are evaluated via weekly feedback on cases and the curriculum; student evaluations at the end of each organ system-based module; each module via optional informal student curriculum check-in meetings and official feedback meetings with student curriculum representatives. 3) Students' nutrition knowledge is assessed via multiple-choice questions on weekly quizzes/exams. Communication skills are assessed via faculty observation of student-patient interactions. Students evaluate their weight bias via Implicit Association Test. 4) Future investigations will include evaluation of students' knowledge, skills, and attitudes via pre/post surveys based on validated instruments. 5) We plan to conduct student focus groups for additional assessment of outcomes and to obtain feedback.

Potential Impact: These issues impact nutrition curricula and medical practice across the United States. Students and patients alike are harmed by narratives that frame nutrition and weight as moral issues. We

have identified specific, simple changes designed to counter rather than perpetuate harm, and can readily be implemented at other institutions.

References:

- 1) Crowley J, Ball L, Hiddink GJ. Nutrition in medical education: a systematic review. *Lancet Planet Health*. 2019;3(9):e379-e389. doi:10.1016/S2542-5196(19)30171-8
- 2) Miller DP Jr, Spangler JG, Vitolins MZ, et al. Are medical students aware of their anti-obesity bias? *Acad Med*. 2013;88(7):978-982. doi:10.1097/ACM.0b013e318294f817
- 3) Phelan SM, Bauer KW, Bradley D, et al. A model of weight-based stigma in health care and utilization outcomes: Evidence from the learning health systems network. *Obes Sci Pract*. 2021;8(2):139-146. Published 2021 Aug 27. doi:10.1002/osp4.553

Implementing Walking Pad Workstations to Improve Mental and Physical Health in Healthcare Trainees

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Idea: Installing walking pad desk workstations in healthcare trainee workrooms to efficiently incorporate physical activity into a demanding work schedule.

Need: Health professional trainees such as residents and fellows work 68 or more hours per week. Therefore, a majority of their time is spent in the hospital, leaving minimal time for self-care and maintaining healthy habits. Much of this time is spent sitting down—chart reviewing, writing notes, interpreting imaging, or calling consults. Thus, health professional trainees are forced into an overall sedentary lifestyle that can contribute to poor physical and mental health and burnout. A cross-sectional survey of students, faculty, residents and staff from a large university medical system measured the association of health behaviors to physical health, mental health and burnout. The study reported that physical activity reduced the odds of poor physical health outcomes, depression, anxiety and burnout. This displays the impact of physical activity on the overall health of healthcare trainees. Rather than residents and fellows completing their daily time-consuming tasks at seated workstations, walking pad desks in workrooms will allow them to simultaneously complete their duties as efficiently while incorporating activity. Over time, more physical activity will lead to a healthier lifestyle for trainees while promoting productivity.

Methods: The university will provide funding for walking pads and installation as well as maintenance as needed. Each workstation will be equipped with a remote control-operated walking pad as the base with standardized safety features, including a maximum walking speed and an emergency stop. The station will have a height-adjustable standing desk built over the front of the walking pad. A standardized hospital desktop computer will be mounted to the desk, and each workstation will have a phone as well. Each walking pad workstation will cost approximately \$500 to \$600, not including the cost of assembly or desktop computer and phone. Our plan is to launch an initial pilot program at both Keck Hospital of USC and the Detroit Medical Center to determine the impact of this innovation on residents and fellows before implementing the innovation on a larger scale.

To monitor walking pad usage during the pilot period, each workstation will have a dated sign-in sheet; trainees will write their name, educational year, and the start and stop time of use next to the date. This will allow us to measure the frequency in which the workstation is used, average duration of usage, peak times of use, and number of distinct users.

Evaluation Plan: The goal of in-hospital walking pad workstations is to encourage physical activity by making it more accessible to trainees. The purpose of our evaluation is to measure the impact of this innovation on multiple facets of trainee health and wellbeing. We will utilize a Qualtrics survey at several time points. Both before and 3, 6, and 12 months after launching the innovation, each participant will complete a survey that assesses their mental and physical health, allowing us to track changes in baseline health. Surveys will include measures of quality and quantity of sleep, self-perception of daily energy level, concentration, mood, stress level, productivity, and personal and job satisfaction. Participants will rate each category using a 7-point Likert scale, with 1 as extremely poor and 7 as excellent. A pre-intervention survey will determine trainee's degree of interest and anticipated amount of time using the walking pad desk. A final post-test survey 12 months later will ask if participants used the walking pad as frequently as anticipated and encountered problems like lack of availability. We will then share the results with healthcare workers and administrators to demonstrate the impact of the innovation on health outcomes.

Potential Impact: This innovation will improve quality of life for residents and fellows. Short term, it will reduce stress levels while increasing productivity, job satisfaction, and mood. Long term, it will improve

mental and physical health outcomes and decrease burnout. This innovation will challenge the standard that healthcare workers lack time for self-care.

References:

- 1) Howie EK, Cannady N, Messias EL, McNatt A, Walter CS. Associations between physical activity, sleep, and self-reported health with burnout of medical students, faculty and staff in an academic health center. *Sport Sci Health*. 2022;18(4):1311-1319. doi:10.1007/s11332-022-00902-7
- 2) Kerr J. This folding walking pad changed the way I exercise at home forever. *CNN Underscored*. Published February 22, 2023. Accessed October 2, 2023. <https://www.cnn.com/cnn-underscored/reviews/fyc-walking-pad-under-desk-treadmill#:~:text=Cost%3A%20Walking%20pads%20are%20typically>
- 3) Mendelsohn D, Despot I, Gooderham PA, Singhal A, Redekop GJ, Toyota BD. Impact of work hours and sleep on well-being and burnout for physicians-in-training: the Resident Activity Tracker Evaluation Study. *Med Educ*. 2019;53(3):306-315. doi:10.1111/medu.13757

Dissecting the Impact of Art in Medicine

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Problem Statement: Few studies have examined the impact of using visual art to reflect on cadaveric dissection, an experience that causes a complex range of emotions.

Rationale: Recently, art in medical education has shifted towards a wider spectrum of educational purposes. Different approaches have been used within curricula, including observational art exercises and journal reflections on patient experiences (1). Studies show use of art in medicine facilitates the creation of physicians who are more attuned to patients' experiences and emotions (2).

However, the use of visual art in processing the cadaveric dissection experience has been less explored. Many students struggle to reconcile their views of donors as learning tools with recognizing them as humanistic, unique beings, resorting to feelings of detachment to cope (3). Keeping donor anonymity can lessen the emotional burden, but they also create distance with donors and prevent the cultivation of humanistic values pertinent to patient care. Finding effective coping mechanisms and activities for healthcare students is important, given the burnout and stresses in medical training and career.

Methods: At the Duke University School of Medicine, the Anatomy Drawing Program (ADP), a program that has now existed for the past seven years and has had over 150 participants, invites interprofessional healthcare students to learn and apply artistic skills while reflecting on their personal emotions and experiences associated with cadaveric dissection.

Through the 2022-23 academic year, a cohort of 29 participants consisting of medical, physician assistant, and pathologists' assistant students participated in six sessions. At these sessions, a guest speaker with unique experience in the medical humanities gave a 30 to 45-minute talk. Then a local artist and scientific illustrator led the group in a guided art demonstration. Students were then given set time in the human anatomy lab for cadaveric drawing.

At the final workshop, students were given an anonymous survey that consisted of seven short answer questions about the program. These questions were given to evaluate changes in students' perspectives on anatomy, mental health, interdisciplinary relationships, and art as a result of completing the ADP.

Survey responses were analyzed by two independent coders via content analysis. The coders then discussed how the responses were categorized. Five themes emerged from the analysis.

Results: Mental Health

For many, the program provided dedicated space and time away from academics, forcing them to "check in" with themselves and help them practice "mindfulness". Students appreciated the encouragement to pursue "creative tasks", which do not always flourish when "[their] priorities are all school". Art provided the opportunity to turn their minds away from the anxiety that they often associated with academic pursuits which occupied more of their time.

Processing the Cadaveric Dissection Experience

Many students had increased appreciation for the human body beyond the "sterility" of the "biological" perspective they adopted during dissection. This gave them a more "holistic" and even "spiritual" view of the human body, enhancing their relationship with anatomy and increasing their gratitude towards their donors.

Analytical Skills and Objective Learning

Many reported becoming more attentive to anatomical structures and details. This increased attentiveness allowed them to “connect structure and form to design and functionality.”

Visual Art Skills

Students benefited from the use of different art materials and tips. They appreciated the de-emphasis on mastery, which put the creative process into perspective with other goals.

Understanding of Interdisciplinary Relationships

Students felt supported by finding a community of students with similar academic and personal challenges. They also learned about various roles and curricula interprofessionally.

Potential Impact: Art in anatomy education may be beneficial for mindfulness and reflective processing. This is not limited to the cadaveric dissection experience, as art in medicine can play various roles in education, mental health, and skill development. A humanistic approach in healthcare curricula is invaluable in forming well-rounded healthcare professionals.

References:

- 1) Bell LTO, Evans DJR. Art, anatomy, and medicine: Is there a place for art in medical education? *Anatomical Sciences Education*. 2014;7(5):370-8. doi: 10.1002/ase.1435.
- 2) Kidd M, Nixon L, Rosenal T, Jackson R, Pereles L, Mitchell I, et al. Using visual art and collaborative reflection to explore medical attitudes toward vulnerable persons. *Canadian Medical Education Journal*. 2016;7(1):e22-e30. doi: 10.36834/cmej.36680.
- 3) Bohl M, Bosch P, Hildebrandt S. Medical students' perceptions of the body donor as a “First Patient” or “Teacher”: A pilot study. *Anatomical Sciences Education*. 2011;4(4):208-13. doi: 10.1002/ase.231.

Association Between Burnout, Exercise, and Self-Care in UNM Medical Students

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Problem Statement: Burnout affects about 50% of medical students and has significant implications on the personal and professional lives of students.

Rationale: Burnout is highly prevalent among medical students, despite medical students having better mental health measures at the time of medical school matriculation than age-matched controls. (2,3) Burnout in medical students is associated with high levels of stress and depression, lower academic performance, and lapses in professional behavior. (1,2) Identifying evidence-based strategies to prevent or treat burnout is a priority. The purpose of this study is to evaluate the association between exercise, self-care, and burnout in students at the University of New Mexico School of Medicine (UNM SOM). The authors hypothesized that higher reported levels of self-care or meeting the CDC recommended amount of exercise per week is associated with reduced burnout. While there is an intuitive correlation between self-care and burnout, there is scant evidence of the relationship in the literature. Literature on the relation of exercise and burnout in medical students has conflicting results.

Methods: UNM medical students complete an annual Medical Student Wellness and Learning Environment Survey. The survey is intended to identify areas of strengths and areas of opportunity for enhancing medical student wellness. Surveys were completed by students in the UNM SOM Classes of 2022, 2023, 2024, and 2025 in the Spring of 2022. Survey results for questions pertaining to self-care, exercise, burnout, and demographic information were utilized for this study. The researchers used survey results to identify levels of burnout, exercise, and self-care in UNM medical students, and assess the association between burnout, exercise, and self-care. The study received IRB approval.

Stata 15 (College Station, Texas) software was used for all tabulations and statistical analyses. Distributions were determined for six variables and a total of 285 medical students from UNM's graduating from classes of 2022 to 2025. Bivariate odds ratios and their 95% confidence intervals from logistic regression analyses were determined between burnout and each of the other variables. Multivariate logistic regression modeling was performed starting with an initial full model that included all variables with backward selection at $p < 0.05$.

Results: Of the 285 medical students who responded to the survey, 116 (41%) selected being burned-out at least a few times per week. 39% were CDC exercise compliant and 56% reported self-care as fairly or very often. A statistically significant relationship was identified between reduced self-care and higher burnout ($p = 0.000$). Meeting the CDC recommended guidelines for weekly exercise was not found to be significantly association with burnout level ($p = 0.380$).

Potential Impact: Encouraging students to follow personal self-care practices may be a strategy to address burnout. Additionally, institutional structure and culture that enables self-care practices may prevent and reduce burnout. Further research is needed to clarify the role exercise plays in medical students' wellbeing.

References:

- 1) Gheihman G, Singh TA, Cooper CA, McKeon BA, Hirsh DA, Simpkin AL. Everyday Resilience: Equipping Faculty With Practical Exercises to Promote Resilience Among Medical Students. MedEdPORTAL. Published online January 25, 2021:11076. doi:10.15766/mep_2374-8265.11076
- 2) Brazeau CMLR, Shanafelt T, Durning SJ, et al. Distress Among Matriculating Medical Students Relative to the General Population: Academic Medicine. 2014;89(11):1520-1525. doi:10.1097/ACM.0000000000000482

- 3) Gold JA, Johnson B, Leydon G, Rohrbaugh RM, Wilkins KM. Mental Health Self-Care in Medical Students: a Comprehensive Look at Help-Seeking. *Acad Psychiatry*. 2015;39(1):37-46.
doi:10.1007/s40596-014-0202-z

Integrating Ergonomics Training into Undergraduate Medical Education

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Idea: Training clerkship students on ergonomic considerations in clinical settings to prevent musculoskeletal injury and promote physical well-being.

Need: Medical training, especially during the clerkship year, can be a mentally and physically demanding experience for students. Medical schools across the country are increasingly emphasizing resources for emotional well-being. Yet, meaningful education surrounding physical well-being and ergonomic considerations in medical school is not as prevalent. Teaching of ergonomic considerations is standard practice in many other health professions, including physical therapy (PT), occupational therapy (OT), dentistry, and veterinary medicine. Although all medical students participate in surgeries and procedures, ergonomic training is usually only presented to surgical residents. In addition, since the COVID-19 pandemic, medical students have increasingly reported musculoskeletal (MSK) pain earlier in their training, possibly due to increased sedentary time and use of electronic devices. We propose an ergonomics education program for medical students to address these issues and to support physical well-being in various clinical settings. In prioritizing ergonomics education, we hope to reduce MSK pain, fatigue, and burnout among students while promoting resilience, longevity of students' future careers, and long-term quality of life.

Methods: The workshop will be offered to medical students in their clerkship or post-clerkship year at the Keck School of Medicine of USC. In collaboration with PT and OT faculty, we plan to design an interactive 1-hour workshop centered on proper posture and positioning in clinical settings with a focus on best practices for completing physical examinations, assisting with surgeries and procedures, and using computers for prolonged periods. This workshop will be timed either during "Transitions to Clinical Practice," a clerkship preparation course, or midway through the clerkship year during the "Intersession" week to maximize student attendance and allow for translation of gained knowledge to clinical practice during the remainder of the clerkship year. The workshop could also be offered during the Surgery or OB/GYN clerkships. The session will incorporate ergonomics education from PTs and OTs, comparison images of proper posture contrasted with common postural pitfalls, opportunities for practice and evaluation, and prevention and treatment strategies for students to apply in practice. At the end of the workshop, students will develop a SMART goal (Specific, Measurable, Achievable, Relevant, and Time-Bound) to incorporate one of the ergonomics principles discussed during the workshop into their daily lives. This proposal will be presented to the deans of medical education and clinical curriculum for adjustments and to find an appropriate place to deliver this content to students.

Evaluation Plan: The evaluation of the program will incorporate (1) a pre-workshop survey, (2) a post-workshop survey immediately following the workshop, and (3) a follow-up survey conducted three months later. The pre-workshop survey will collect information about the prevalence and severity of existing MSK symptoms, baseline knowledge of ergonomic considerations in clinical practice, and understanding of PT/OT scope of practice. The post-workshop survey will be delivered immediately following the conclusion of the session and will evaluate the perceived helpfulness and relevance of the workshop, planned implementation of techniques, and understanding of interprofessional collaboration with PT/OT. Quantitative ratings and qualitative written feedback will also be collected and compiled to improve future iterations of the workshop. The follow-up survey will evaluate the application of skills learned during the workshop into clinical practice, perceived differences in MSK symptoms experienced, impact on measures of physical and emotional well-being, and comfort with appropriately involving PT/OT in patient care.

Potential Impact: Ergonomics education for medical students will encourage interprofessional collaboration and impart physical wellness strategies to use during an often rigorous clerkship year and beyond. This workshop can serve as a model for health professional programs looking to improve students' understanding of MSK concerns while promoting their well-being.

References:

- 1) Vosper, Helen, Sue Hignett, and Paul Bowie. "Twelve tips for embedding human factors and ergonomics principles in healthcare education." *Medical Teacher* 40.4 (2018): 357-363.
- 2) Gupta, Ravi, Rohit Gupta, and Gita Negi. "Medical students' wellness from the perspective of ergonomics and occupational mental health." *Indian Journal of Social Psychiatry* 37.2 (2021): 143-147.
- 3) Allespach, Heidi, et al. "Practice longer and stronger: maximizing the physical well-being of surgical residents with targeted ergonomics training." *Journal of Surgical Education* 77.5 (2020): 1024-1027.

The Best Possible Self: Advancing a Dispositional Optimistic Mindset in Medical Education

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Problem Statement: There is a paucity of data in medical education on dispositional optimism which is associated with improved academic and mental health outcomes.

Rationale: Optimism is the expectation that one's outcomes will generally be positive and that a stressful present can change to become better in the future. Optimistic people exert effort, whereas pessimistic people disengage from effort. Studies show that optimistic people are more successful in professional efforts and work harder at relationships to have better social support. Optimism has been shown to be protective against coronary artery disease and mortality. Research has found that those high on dispositional optimism exhibit lower levels of anxiety, self-consciousness, alienation, and depression. Optimists exhibit greater self-esteem and a more internal locus of control. Interactive workshops on optimism can potentially enable learners and faculty to have positive expectations of the future, regardless of current stressful conditions which can lead to improved work ethics and better outcomes

Methods: We sought to determine if an interactive workshop can enable participants to assess their level of dispositional optimism or pessimism. We aimed to assess the prevalence of the effective decision-making style of No Problem versus the problematic decision-making styles of Doubtfulness, Delegation, and Procrastination. We assessed if participants in a workshop can practice the best possible self-exercise to improve dispositional optimism and decrease pessimistic or harmful thoughts. We developed interactive workshops that included: a) completion of the Life Orientation Test (LOT) that assesses dispositional level of optimism; b) debrief and group reflections on results c) presentation on optimism, decision-making styles, cognitive distortions, reframing and acceptance; d) The Best Possible Self activity; e) Group activity on using Optimistic Mindset Worksheet; e) large group discussions report out; f) Self-assessment survey to determine perceptions and efficacy of program. The workshop was about 90 minutes in duration. Statistical analysis was done and a p value of <0.5 taken as significant.

Results: From May 2022-April 2023; 151 participants included high school students (3.4%); medical students (43%), residents (28.8%) and faculty (24.8%); of which 44% were Non-Hispanic Whites, Asians were 37%, Latinx 12% and African Americans 4%. High optimism was perceived by 20% and high stress by 8% of participants. Decision making styles included no problem = 20%; doubtfulness = 24%; delegation =21% and procrastination style = 23%.

Students with high optimism versus high pessimism scores were significantly less likely to use the doubtfulness decision making style (10.05 vs.12.12; $p=0.032$) or to be stressed (12.39 vs.19.21, $p=0.011$) or burnout (2.00 vs. 2.79; $p=0.024$). Significant negative correlations occurred between optimism scores with procrastination ($\rho(r) = -.204$; $p=0.041$), doubtfulness ($r = -.201$; $p=0.044$), stress ($r = -.468$; $p<0.001$), and burnout scores ($r = -0.208$; $p=0.042$). Burnout was positively correlated to stress ($r = .423$; $p=0.001$) and doubtfulness scores ($r = .432$; $p=0.002$) but negatively with no problem decision making style ($r = -.279$, $p=0.047$). Faculty compared to learners had significantly higher procrastination scores (12.12 vs. 10.33; $p=0.030$) but lower no problem scores (10.29 vs. 11.84; $p=0.004$), were older (42.33 vs. 25.59; $p<0.001$) and had lower stress score (13.67 vs.17.89; $p=0.025$). Participants rated the value of the workshop as 4.33.

Potential Impact: Those with higher optimism scores were less likely to use problematic decision-making styles, were less stressed and had less burnout. Faculty were more likely to use problematic decision-making styles but were less stressed. Similar workshops can be incorporated into GME wellbeing curricula to support resilience and mitigate burnout.

References:

- 1) Sagone, E.; Indiana, M.L. Are Decision-Making Styles, Locus of Control, and Average Grades in Exams Correlated with Procrastination in University Students? *Educ. Sci.* 2021, 11, 300.
<https://doi.org/10.3390/>
- 2) Magnano, P., Paolillo, A., & Giacominielli, B. (2015). Dispositional Optimism as a Correlate of Decision-Making Styles in Adolescence. *SAGE Open*, 5(2).
<https://doi.org/10.1177/2158244015592002>
- 3) C, Carver, Scheier M. Dispositional Optimism, *Trends Cogn Sci.* 2014 June ; 18(6): 293–299.
doi:10.1016/j.tics.2014.02.003.

Bringing Health to Medicine: Lifestyle Medicine Academic Enrichment Elective

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Idea: Forming a new Lifestyle Medicine Academic Enrichment Elective to enable medical students to apply lifestyle medicine to prevent and manage disease.

Need: In the U.S., chronic disease makes up 90% of the \$3.3 trillion spent on health care yearly, with the annual cost of physical inactivity being approximately \$117 billion (1). The World Health Organization states that lifestyle accounts for 60% of individual health (2). And yet, only 13% of U.S. Allopathic medical schools include topics such as wellness and exercise in the curriculum (1). According to the American College of Lifestyle Medicine (ACLM), up to 80% of chronic diseases can be addressed by lifestyle medicine (LM) approaches (3). LM consists of six pillars: nutrition, physical activity, stress management, restorative sleep, social connection, and avoidance of risky substances. The introduction of a new Academic Enrichment Elective aims to supplement the curriculum at the Medical College of Wisconsin (MCW). Students will be equipped to manage chronic disease not only with medications and surgical applications learned in the main curriculum, but also apply the six pillars of lifestyle medicine. This will provide students with LM training that they mostly likely would not receive otherwise throughout their entire medical training.

Methods: This classroom-based elective will empower interested first and second-year medical students to apply LM. There will be 8 weekly sessions, each 1.5 hours long, at MCW. The plan for sessions is as follows: 1) Introduction to LM: evidence for LM, challenges of lack of LM training for U.S. physicians. 2) Nutrition Part 1: physiology and pathophysiology of how our bodies process food and proper nutrition. 3) Nutrition Part 2: relationship between health equity and nutrition with community involvement, and live cooking demonstration. 4) Physical Activity: exercise's impact on chronic disease and proper exercise requirements. 5) Managing Stress: evidence of stress' relation to disease, and strategies for mental wellness. 6) Safe Substance Use: evidence-based guidelines on risky substances and referral tools. 7) Sleep and Social Connection: strategies for better sleep hygiene, risks of social isolation, and how the U.S. compares to other countries in terms of social connectedness. 8) Application: LM resources and opportunities for future practice (i.e. ACLM), speaker panel, collaboration with other providers, and self-assessment of own lifestyle. Each session will end with a patient case(s) and practicing motivational interviewing in small groups, with presentations to the class, relating to that session's topic. Speakers will come from various backgrounds, such as LM-certified physicians from various specialties, dietitians, and clinical psychologist wellness experts.

Evaluation Plan: The evaluation of both students and effectiveness of the course include several components. Firstly, a pre- and post-knowledge-assessment will track students' progress throughout the course, and thereby the effectiveness of this elective's teaching practices. Secondly, the self-assessment of students' own lifestyles during the last session will reflect the degree of strength of their LM knowledge and perspective. Thirdly, students' small-group work and large-group presentations on patient cases at the end of each session will measure their comprehension and ability to apply each pillar of LM. In addition, a survey form will track attendance to gauge participation. Lastly, to evaluate the course itself, students will complete a post-survey rating the course. This will include feedback on how to improve the course, as well as recommendations to implement LM into the main curriculum as the future allows.

Potential Impact: By equipping students with much-needed LM training, they will be able to prevent and treat the root cause of chronic diseases for patients, educate and train others in LM, and transform how health care is practiced. This will provide a framework not only for the main curriculum at MCW, but other medical schools as well, to instruct students in LM.

References:

- 1) Trilk, Jennifer, et al. "Including lifestyle medicine in medical education: rationale for American College of Preventive Medicine/American Medical Association resolution 959." *American Journal of Preventive Medicine* 56.5 (2019): e169-e175.
- 2) Abe, Minako, and Hiroyuki Abe. "Lifestyle medicine—An evidence based approach to nutrition, sleep, physical activity, and stress management on health and chronic illness." *Personalized Medicine Universe* 8 (2019): 3-9.
- 3) American College of Lifestyle Medicine. Available online at: <https://lifestylemedicine.org/about-us/>

Introduction to Clinical Decision Making in a Pre-Clinical Science Master's Program

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Problem Statement: Students require better training in clinical decision making to be prepared for problem-based learning (PBL) approaches used by Medical Schools

Rationale: Varying methods of active learning have been proposed in both undergraduate and graduate teaching.¹ In most medical schools, PBL is the preferred approach.² However, many medical students who do not have previous experience shadowing a physician or working in a healthcare setting usually struggle understanding how to utilize clinical thinking, especially in their first year.³ Case studies are an effective active learning modality when embedded into teaching curricula. Thus, to prepare our students in the Master of Science in Preclinical Sciences (MSPCS) and Master of Science in Biomedical Sciences (MSBMS) program of Mercer University School of Medicine (MUSM), we introduced an interactive problem-based module titled "Case-of-the-week" in the medical microbiology course. In this module, students learn key aspects of linking patients' signs and symptoms to their etiological infectious disease diagnosis via class presentations followed by a question-and-answer session.

Methods: Students were paired and given a clinical case scenario involving an infection and asked to make a 10–15-minute presentation to the entire class. The students were asked to discuss their differential diagnosis as they presented to the class and determine the clinical decisions towards a diagnosis of the case, including a description of the possible etiologic agent. Students were also allowed to provide "results" to any tests they "ordered" but needed to provide the rationale for how those results led to a diagnosis. Emphasis was placed on the logic of the path rather than a particular diagnosis. As part of their grade, students were required to ask questions during other student's presentation. At the end of the course, students were asked for their perception in a de-identified open-ended course evaluation survey administered online.

Results: A total of 78 students were in the MS program between 2021-2022. Overall, there were 33 (42%) student responses on the case of the week module in the course evaluations. Of the 33 responses from the two different academic sessions, 97% (32/33) indicated it was beneficial whereas only one student was neutral. In the "beneficial" group the comments were such as: "The case of the week assignment was very beneficial. It gave me insight into how to think clinically and critically when considering differential diagnoses."; "The case of the week studies made us better students as it helped us understand the clinically relevant symptoms, testing, diagnostic criteria, and treatments for a wide spectrum of important disease"; "The case of the week presentation made me feel like what a physician has to go through. I think it was beneficial because it made us think critically about patient symptoms and differential diagnosis". Conversely, the comment categorized as neutral was: "I enjoyed the case of the week presentations but wish they did not happen on the same day as exams in other classes. That was difficult to manage.....".

Potential Impact: Our data suggests that the student's exposure to the case studies was perceived as very beneficial. Possible benefits include understanding clinically relevant infectious diseases, related diagnostic processes, critical thinking, clinical decision-making processes, reinforcing knowledge and working together as a team.

References:

1) Dring, J. C. (2019). Problem-based learning—Experiencing and understanding the prominence during medical school: Perspective. *Annals of medicine and surgery*, 47, 27-28.

- 2) Dolmans, D., Michaelsen, L., Van Merriënboer, J., & Van der Vleuten, C. (2015). Should we choose between problem-based learning and team-based learning? No, combine the best of both worlds! *Medical teacher*, 37(4), 354-359.
- 3) Moffat, K. J., McConnachie, A., Ross, S., & Morrison, J. M. (2004). First year medical student stress and coping in a problem-based learning medical curriculum. *Medical education*, 38(5), 482-491.

Ethics and Health Equity in Dermatology: Designing an Elective for Undergraduate Medical Students

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Problem Statement: We developed a discussion-based dermatology elective to address underrepresentation of marginalized groups in the UME curriculum at Dartmouth.

Rationale: Deficits in dermatology UME curricula have been extensively reported. In addition to limited dedicated dermatology courses, a well-documented underrepresentation of marginalized groups, including patients with skin of color, in UME dermatology teaching materials leaves students interested in a career in dermatology underprepared to provide culturally competent care. A survey of dermatology residents demonstrated decreased levels of confidence in caring for patients with skin of color compared to patients with white skin. The demand for a competent health workforce to meet the needs of an increasingly diverse society can be aided by expanding and diversifying UME.² Despite the demonstrated need to diversify UME dermatology curricula, most institutions cannot accommodate this need as they encounter rigid time allotments that prevent the expansion of their curricula.

Methods: Dermatology: Ethics and Health Equity is a discussion-based elective for first and second-year medical students. This course was introduced at the Geisel School of Medicine in 2022. The course consisted of six sessions. Peer-reviewed articles were assigned as pre-reading to prepare students to participate in discussions about each session topic. Session topics included: perceptions of race and race-based corrections currently utilized in clinical algorithms; historical inequities in clinical dermatology and dermatologic research with special considerations in vulnerable populations; deficits in the training of dermatologists to adequately address skin concerns in patients of color; opportunities for the field of dermatology to advocate for the LGBTQIA+ community; and contemporary ethical concerns in clinical research. Sessions were facilitated by a senior medical student and a member of the dermatology faculty. Enrolled students gave a brief overview of the assigned readings to start each session. Discussion moderators then encouraged participants to explore the session topics using question prompts to guide the conversation. These sessions encouraged participants to think critically about each topic and identify opportunities for improving and expanding dermatologic care to meet the needs of diverse patient populations. The final session was the course capstone, during which enrolled students presented current literature relevant to health equity and ethics in dermatology.

Results: This was a pass/fail course. Students enrolled in the course were evaluated based on participation in the course sessions and completion of the capstone project. Two UME students enrolled in our elective course for credit in the fall of 2022. The course was also open to participants who were not formally enrolled. Throughout six sessions, there were a total of 93 participants. Voluntary surveys were distributed to all participants at the end of each session to assess satisfaction with the course and collect recommendations for improvement. Six participants submitted survey responses; 100% of respondents would recommend this course to a classmate. Recommendations for improvement included making reading materials more readily accessible for participants who were not formally enrolled in the course. The course is being offered again in the fall of 2023; six students have formally enrolled in the course for credit during this term. Survey data will be collected again in 2023.

Potential Impact: This elective covers many underrepresented topics relevant to dermatology and health ethics. An elective such as ours offers medical schools the opportunity to enhance cultural competency in their UME curricula. The goal of this course is to prepare students pursuing dermatology to provide ethical and equitable care to diverse patient populations.

References:

- 1) Cahn BA, Harper HE, Halverstam CP, Lipoff JB. Current Status of Dermatologic Education in US Medical Schools. *JAMA Dermatol.* 2020;156(4):468. doi:10.1001/JAMADERMATOL.2020.0006
- 2) Okoro U, Chau TQ, Kawaoka J, Wong V, Qureshi AA. Skin of Color in Preclinical Medical Education: A Cross-Institutional Comparison and A Call to Action. *Cutis.* 2021;108(4):204-209. doi:10.12788/cutis.036
- 3) Yoon JH, Aria AB, Gu H, Rosman IS. Diversity within US dermatology residency programs and opportunities to care for underserved populations: A 2020 survey study. *Clin Dermatol.* 2022;40(6). doi:10.1016/J.CLINDERMATOL.2022.08.001

Evaluation and Improvement of Intellectual Disability Education in Medical School Curriculum

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Problem Statement: Current medical education inadequately prepares future physicians to provide quality care to patients with intellectual disability.

Rationale: 12.8% of adults in the United States have an intellectual disability (ID). This community faces barriers to quality healthcare including discriminatory environments, provider biases, and insufficient provider education. Without studies demonstrating improved results with intervention, specific education in treating patients' intellectual disabilities has failed to enter the busy curriculum at most medical schools. This study seeks to evaluate the education and comfort of medical students in providing care to patients with ID at the beginning and end of their medical school training to assess current disability education. It then evaluates the impact of a brief learning module on the knowledge and comfort of medical students in caring for this population.

Methods: This study proposal was evaluated by our institution's Group on Research in Medical Education (GRIME) review board as well as also receiving Institutional Review Board – Social and Behavioral Sciences (IRB-SBS) exempt approval. To evaluate medical student's familiarity and comfort level in caring for patients with ID, a four-question survey was sent out to first and fourth year medical students over two years (2022-2023) at an LCME accredited medical school in the United States. The survey evaluated previous training and experience interacting with patients with ID, comfort in de-escalating problem behaviors or crises involving a patient with ID, and whether their current medical education had provided adequate information on providing health care to patients with ID. A 15 minute learning module highlighting the importance of ID education, general communication, offering assistance, preventing and treating maladaptive behaviors or crises, escalating safety care, as well as local and national resources was then sent to the first year medical students, followed by a brief 10-question multiple choice assessment. A one question survey utilizing a 5 point Likert scale (1 strongly disagree to 5 strongly agree), to measure the success of the module was also requested.

Results: 16.1% of first (51/316) and 12.7% (41/322) of fourth year students responded to the surveys. Results across groups were similar with 84.3% and 80.5% of first and fourth year students finding their current disability education inadequate. Additionally, 72.5% of first year students and 73.2% of fourth year student reported they would not feel comfortable deescalating problem behaviors in a clinical environment. Following the 15-minute educational module, 15.7% (8/51) of the first year students who completed the initial survey also completed the post module Likert survey. Of those 25% (2/8) strongly agreed, 37.5% (3/8) agreed, and 37.5% (3/8) were neutral on if they were more knowledgeable and confident in their ability to care for patients with intellectual disabilities.

Potential Impact: The results of our study illustrated that there was a similar level of education, experience, and overall discomfort in providing care and deescalating situations involving patients with ID across first and fourth year medical students, suggesting that there may not be sufficient education and exposure to this area in medical education.

References:

- 1) Ioerger, M., Flanders, R.M., French-Lawyer, J.R., Turk, M.A., 2019. Interventions to Teach Medical Students About Disability: A Systematic Search and Review. *Am J Phys Med Rehabil* 98, 577–599. <https://doi.org/10.1097/PHM.0000000000001154>
- 2) Burge, P., Ouellette-Kuntz, H., Isaacs, B., Lunsby, Y., Undergraduate Medical Education in Intellectual Disabilities Group at Queen's University, 2008. Medical students' views on training in intellectual disabilities. *Can Fam Physician* 54, 568–569, 569.e1–6.

- 3) Trollor, J.N., Eagleson, C., Turner, B., Tracy, J., Torr, J.J., Durvasula, S., Iacono, T., Cvejic, R.C., Lennox, N., 2018. Intellectual disability content within tertiary medical curriculum: how is it taught and by whom? *BMC Med Educ* 18, 182. <https://doi.org/10.1186/s12909-018-1286-z>

The Game of Life: A Walk in My Shoes; Life & Health Disparities in Appalachia

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Problem Statement: Per the health disparities data provided by the Appalachian Regional Commission, Appalachians have significantly higher mortality rates.

Rationale: The purpose of this study is to bring awareness of health disparities due to diversity, equity, and inclusion (DEI), promote positive change in health care by health care professionals, and foster more research in this area, with a focus on indigent Appalachian patients.

Methods: We have heard it said, "If you want to know what my life is like, then walk a mile in my shoes". This poster and oral presentation identify health disparities using data from interviews with 5 indigent Appalachian patients. By sharing this data, health care professionals and other audience participants may virtually "walk a mile" in someone else's shoes. The oral presentation allows participants to play an adaptation of the board game "Life", where players figuratively walk in the shoes of another. Each player is assigned the identity of an avatar. One of which is an indigent from Appalachia. As the game progresses, multiple life events will happen to the players, including the COVID pandemic. The players will be affected by each life event, as it pertains to their walk of life. Throughout the game, facts will be given about health disparities, pertaining to DEI. Because of our emerging awareness of the effects of health disparities, the face of health care delivery is changing. One objective of this presentation and game is to bring even more awareness to these disparities. At the end of the game, the winner is based upon material earnings. However, the more notable "win" is that participants will have "walked a mile" in someone else's shoes, gained an intimate understanding of multiple health disparities and their causes, and evaluated options on how we navigate these issues as professionals.

Results: Statistics from interviews with 5 Appalachian adult patients.

- 100% experienced some form of disparities due to DEI
- 100% experienced some form of anxiety or uncertainty about understanding health care providers
- 60% had received their COVID vaccine
- 0% kept up with their regular visits to their PCP, specialists, dentist, optometrist
- 40% had encountered some type of medical error of which they were aware
- 80% were happy with their medical health care
- 100% thought their medical care was affordable

Potential Impact: We know from the data published by the Appalachian Regional Commission (ARC) that our Appalachian patients are in crisis.

Even though this study sample size was small, the data appears to echo the ARC statistics and shows that the issue of health disparities in our Appalachian patients is a problem warranting more investigation.

References:

- 1) Creating a Culture of Health in Appalachia: Mortality. Health Disparities in Appalachia: Mortality (PDF: 6.5 MB) (arc.gov)
- 2) USF Health. Morsani College of Medicine. Demonstrating Professionalism in Healthcare Settings. Demonstrating Professionalism in Healthcare Settings - USF Health Online
- 3) National Association of Counties: Opioids in Appalachia: The Role of Counties in Reversing a Regional Epidemic. Opioids in Appalachia: The Role of Counties in Reversing a Regional Epidemic (naco.org)

How to Pivot from Race Based to Race Conscious Medicine in Obstetrics and Gynecology

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Idea: The race-conscious approach seeks to reform race-based medicine across clinical practice, education, leadership, and research.

Need: Race-based medicine is when health care providers use a person's race as an element to define their health. In contrast, race-conscious medicine is an alternative approach that emphasizes racism, rather than race, as a key determinant of illness and health, encouraging providers to focus only on the most relevant data to mitigate health inequities. It also aims to promote conscious, anti-racist practices over unchecked assumptions that uphold racial hierarchies. This presentation would contribute to the elimination of systemic racism and the resultant disparities in healthcare and the learning environment by the transformational process of a "train-the-trainer" model for faculty development in the establishment of an anti-racism curriculum. By a review of the health and health care disparities in obstetrics and gynecology, a starting point will be determined on this educational journey.

Methods: Learner Outcome Objectives:

- Describe the core components/framework of race-based medicine compared to race-conscious medicine (knowledge)
- Learn how to recognize and evaluate a clinical race-based tool (comprehension)
- Practice constructing a clinical summary to convey a concise and equitable patient presentation (application/analysis/synthesis)
- Consider ways to teach learners about race-based medicine and ways to evaluate resources that will impact their awareness and future practice (evaluation/impact)

Intended Participants: medical educators, learners, faculty members

Methods: We will define and review a race-based framework and relevance to obstetrics and gynecology, including a discussion of the use of the race-based vaginal birth after cesarean (VBAC) calculator and race-based clinical pelvimetry. We will share the APGO Diversity, Equity and Inclusion (DEI) guidelines checklist to analyze and learn how to think critically about tools/resources in our field and discuss how negative patient descriptions correlate with poor health outcomes. We will examine how a determination of unmet social needs, social determinants/drivers of health, and bias and discrimination in root cause analyses (RCAs) and morbidity and mortality (M&M) conferences illustrate the ways in which race-based medicine shows up in obstetrics and gynecological practice.

Evaluation Plan: Interactive component- In small groups, participants will review patient descriptions that are provided in sample handoffs/sign-outs. Small groups will change/re-work the provided information with an equity lens that will demonstrate how this change to a race conscious framework can potentially positively impact health outcomes, quality of care, patient experience, including demonstrating that a patient is being heard (patient voice) and respected. Examples include being able to identify negative patient descriptions in the sample handoffs/sign-outs/RCA/M&M cases to small group members.

The large group will debrief on the activity including the following questions:

- Did you make assumptions about the patients based on case descriptions?
- What was most challenging about the exercise?
- What are some if any challenges you may encounter in this change of clinical practice?

The polling feature will be used throughout for level setting and pre- and post-assessment of knowledge, attitudes and practice.

Potential Impact:

Take Home Tools: Educational guidelines for diversity and inclusion: addressing racism and eliminating biases in medical education

References:

- 1) Educational guidelines for diversity and inclusion: addressing racism and eliminating biases in medical education. *Am J Obstet Gynecol*, 2023 Feb;228(2):133-139. doi: 10.1016/j.ajog.2022.09.014. Epub 2022 Sep 13
- 2) O'Brien, J., & Clare, C. A. (2023). Race-based Versus Race-conscious Medicine in Obstetrics and Gynecology. *Clinical obstetrics and gynecology*, 66(1), 95–106. <https://doi.org/10.1097/GRF.0000000000000756>

Building Community Through Introductory Restorative Justice Sessions for Incoming Medical Students

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Problem Statement: Instances of interpersonal or community harm occur in medical schools. A proactive relational framework is needed to navigate such situations.

Rationale: Restorative Justice (RJ) is a relational framework involving those who have a stake in a specific offense to identify and address harms. Over the past decade, RJ has been applied in medicine as an equity-centered framework that prioritizes community participation, as well as active accountability. In medical schools, the kinds of issues that RJ can help navigate include campus climate, Title IX, misconduct, and DEI-related concerns [1].

The American Association of Medical Colleges endorses a 3-tiered approach for embedding RJ practices within medical schools. Tier 1 focuses on building relationships (e.g., through community circles), Tier 2 focuses on responding to harm (e.g., through restorative conferencing and restorative mediation), and Tier 3 focuses on supporting reentry (e.g., through circles of support and accountability) [2]. Our project focuses on Tier 1 practices, which can strengthen a community proactively before an offense has occurred and can mitigate future harm.

Methods: In August 2022, four medical students created and led an optional co-curricular introductory 90-minute RJ session for incoming medical students. Session goals were to introduce incoming students to the process of RJ and help them engage in Tier 1 community circles with their peers. After sharing background about RJ and agreeing on community guidelines, three successive community circle rounds were conducted. An online anonymous survey was distributed afterwards to students via QR code. The survey assessed student belief in the applicability of RJ to community building, interest in RJ, and lessons learned from the session.

In July 2023, an introductory experiential 90-minute restorative justice session was conducted with 50 incoming first-year medical students. Similar to the previous year's session, session goals included introducing incoming students to RJ processes and engaging in Tier 1 community building circles. Of note, this session was not optional and was incorporated into the students' orientation. RJ background and community guidelines were discussed before three successive community circle rounds were conducted. An online anonymous survey was distributed afterwards to students and was completed by forty-two of the fifty attendees. The survey assessed student belief in the applicability of RJ to community building in a medical school, interest in RJ, and lessons learned from the session.

Results: The 2022 optional RJ session was attended by 8 students from the incoming class of 2026. The survey was completed by 4 of the attendees. One question assessed attendee belief that RJ practices could help build community within the medical school. 1 respondent "agreed" with this statement, and 3 "strongly agreed." Additionally, 1 respondent "agreed" that they would like to learn more about RJ, and 3 respondents "strongly agreed." Of note, qualitative responses to what attendees learned from the session included comments about the different RJ tiers, the applicability of RJ, and expressions of fulfillment after participation in the circle. One attendee asked how RJ could be used in response to instances of harm.

The 2023 mandatory RJ session was attended by all 50 students from the incoming class of 2027. The survey was completed by 42 of the attendees. To a statement assessing belief that RJ practices could build community in the school, 32 respondents "strongly agreed," 7 "agreed," 1 was "neutral," 1 "disagreed," and 1 "strongly disagreed." There were 32 qualitative responses about learnings from the session, with common themes reflecting appreciation for hearing the stories of their peers, interest in

deepening connections with the school community, and increased confidence in ability to be vulnerable with others. Other reflections shared in the survey included a desire for a longer session, curiosity about other RJ applications, and interest in more RJ sessions.

Potential Impact: Feedback from introductory RJ sessions with incoming medical students demonstrate strong interest and belief in the use of RJ community circles to strengthen community. There is a call to action to build a culture of inclusive accountability in various healthcare settings. RJ should be considered as one important tool in response to such calls.

References:

- 1) Eniasivam, A., Pereira, L. & Dzung, E. A Call for Restorative and Transformative Justice Approaches to Anti-Racism in Medicine. *J GEN INTERN MED* 37, 2335–2336 (2022).
<https://doi.org/10.1007/s11606-022-07605-2>
- 2) Acosta, David MD; Karp, David R. PhD. Restorative Justice as the Rx for Mistreatment in Academic Medicine: Applications to Consider for Learners, Faculty, and Staff. *Academic Medicine* 93(3):p 354-356, March 2018. | DOI: 10.1097/ACM.0000000000002037

Kids, Fair Housing, and Health

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Idea: Utilize a cooperative learning model to develop a pre-clerkship elective that explores the health needs of children through a fair housing lens.

Need: Housing is a fundamental determinant of health. Disparities in housing access and quality have a profound impact on health outcomes. Fair housing materials for professionals are often written by fair housing legal experts and assume a basic understanding of fair housing history and statutory law. They are not designed to be accessible to medical students.

Methods: A group of medical students from various US-accredited medical schools met weekly to discuss the role of housing as a social determinant of health. These faculty-facilitated small group discussions included readings from fair housing experts and engaged students in conversations on fair housing law, fair housing advocacy, and the impact of housing on health outcomes. A cooperative learning model was then utilized to build a framework for designing a pre-clerkship elective focused on fair housing and the health needs of children and adolescents. This framework included identifying faculty guest lecturers, group discussion topics, and selected readings. Course objectives include: (1) Provide students with the knowledge and skills to identify and address neighborhood-level threats to health and safety that impact the health of individuals and communities (2) Empower students to engage in advocacy, research, and community partnerships to promote fair housing and healthcare equity.

Evaluation Plan: Following completion and submission of the elective proposal, medical students who participated in the designing process of the elective framework will be invited to complete a voluntary survey that addresses: (1) Overall satisfaction with the elective proposal (2) perceived benefit of participation in cooperative learning model (3) interest in participating in similar project(s) in the future (4) likely positive impact on future career. Quantitative and qualitative survey responses will be elicited on 7-point scale (1- Strongly Disagree, 2- Disagree, 3- Somewhat Disagree, 4-Neutral, 5-Somewhat Agree, 6- Agree, 7-Strongly Agree) and free-text responses.

Potential Impact: Using a cooperative learning model to develop new pre-clinical electives has the potential to expedite the addition of scholarly, rigorous coursework to medical school curriculums. This initiative holds promise in ensuring physicians remain engaged leaders in addressing housing as a social determinant of health.

References:

- 1) Acevedo-Garcia, Dolores and Theresa L. Osypuk and Nancy McArdle. 2010. "Racial/Ethnic Integration and Child Health Disparities," in Chester Hartman and Gregory D. Squires, eds., 2010. *The Integration Debate: Competing Futures for American Cities*. New York. Routledge. 131-152.
- 2) Alliance for California Traditional Arts. 2014. *Building Healthy Communities: Approaching Health Through Heritage and Culture in Boyle Heights*. Los Angeles. California Endowment.
- 3) Appelt, Cathleen J. and Andrew T. Simpson, Jessica A. Devido, Sarah Greenwald, and Brittany Urban. 2022. "Working Together for Health Equity: How a Multidisciplinary, Community Engaged Partnership Reframed Our Understandings of Pittsburgh's Maternal-Child Health Crisis" *Kalfou* v9 issue 1 (Spring) 72-96

Outside the Frame: Context-Based Approaches to Museum Education in Health Professions Learning

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Problem Statement: Despite growing evidence favoring interdisciplinary medical pedagogy, museum learning remains underutilized in undergraduate medical education (UME).

Rationale: Demand is increasing for the formal integration of contextual and interprofessional teaching into scientific disciplines, shifting from objective approaches in individual learner assessment to more systems-based evaluations cognizant of social and situational factors in the dynamic clinical environment (1). As such, we believe contextual, cross-disciplinary instruction through museum-based learning merits further attention as an undervalued resource in medical education. Many museum-based programs rely on Visual Thinking Strategies (VTS), a pedagogical method in arts-based learning (2). However, we believe current adaptations of VTS may preclude its potential to encourage more explicit interactions with diverse disciplines intersecting in the museum space. For this reason, we sought to intentionally introduce context in our museum curriculum to encourage encounters with unfamiliar cultural, historical, and sociopolitical fields and diversify dialogue in the academic medical community.

Methods: We designed and piloted an elective course in museum-based learning for second-year medical students. The course took place at two different local art museums and incorporated literary readings, crafting exercises, oral presentations, and didactic lectures. Participants enrolled between their first board exam and clinical clerkships, a critical transition in medical education that has shown to heighten student uncertainty, stress, or feelings of inadequacy (3). We aimed to capture student responses to interdisciplinary exposure and the role it might play in helping cope with this educational transition.

A multidisciplinary team comprised of a medical student, palliative care physician, and two museum educators collaboratively developed the curriculum. The course offered 8 sessions from September 2022 to November 2023 across two iterative semester offerings (n=4 and 3, respectively) as a listed option fulfilling a mandatory elective requirement. Assessment of course effectiveness included pre- and post-course surveys with embedded Likert scales on course effectiveness and the validated Tolerance for Ambiguity (TFA) survey, as well as a written narrative reflection responding to two short prompts. All free text responses and narrative reflections were reviewed by two authors to ensure interobserver agreement. Participants consented that their survey responses and narrative reflections be used in a research report.

Results: In the first semester offering of the course, 3/4 students completed both the pre- and post-course survey. All students' survey responses showed increases in tolerance for ambiguity after course completion, and 100% ranked all course activity types as either "valuable" or "very valuable". Free text feedback from the post-course survey and reflective assignment was overall highly positive. Students commented that one of the course's strengths was the diversity of its activities, and how it created a space to exercise ways of thinking and handling "unknowns" that heavily contrasted with formal medical curriculum. Most students expressed a desire for additional sessions, as well as optional outside resources/readings. The general timing and length of the sessions were well-received. Participants' narrative reflections spoke to the sessions' impact in relation to managing the uncertainty of their pre-clinical to clinical transition. Students recognized the importance of incorporating cultural and historical context to formulate an impression of the artwork from multiple sources of information. All students were positively receptive to exploring through the humanities a broader solution space that proposes a range of different interpretations. This space was often described as a necessary and needed respite from the preclinical curriculum.

Potential Impact: Existing frameworks in museum-based education can be bolstered through a context-focused lens that supports uncertainty tolerance and metacognitive practice. Other institutions may adapt

our course example to ensure deeper interprofessional collaborations and contextual learning during times of transition in medical education.

References:

- 1) Reeves S, Fletcher S, Barr H, et al. A BEME systematic review of the effects of interprofessional education: BEME Guide No. 39. *Med Teach*. Jul 2016;38(7):656-68. doi:10.3109/0142159x.2016.1173663
- 2) Ryznar E, Kelly-Hedrick M, Yenawine P, Chisolm MS. Relevance of Visual Thinking Strategies for Psychiatry Training. *Acad Psychiatry*. Feb 2023;47(1):78-81. doi:10.1007/s40596-022-01590-8
- 3) Teunissen PW, Westerman M. Opportunity or threat: the ambiguity of the consequences of transitions in medical education. *Med Educ*. Jan 2011;45(1):51-9. doi:10.1111/j.1365-2923.2010.03755.x

Prioritizing Cultural Humility in the Medical Student Dermatology Curriculum

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Problem Statement: Dermatology programs have historically lacked in education and discussions surrounding cultural humility.

Rationale: Skin of color (SOC) patients, sexual and gender minority (SGM) patients, and modestly dressing or religious patients are often underrepresented in dermatologic training materials^{1,2}. Insufficient cultural humility education may compromise future patient-physician relationships and worsen health outcomes³. Within medical schools, exposure to dermatology is often limited to a few didactic lectures and must therefore be intentionally designed to introduce conversations about cultural humility and represent diverse skin tones in educational material.

At the Medical College of Wisconsin, M3 and M4 dermatology lectures traditionally include diverse clinical photos and a writing assignment on SOC dermatology but do not incorporate SGM-specific dermatology or religious considerations. We hypothesized that developing lecture material focused on cultural humility will increase students' self-reported proficiency in diagnosing dermatoses on SOC and conducting culturally sensitive patient care.

Methods: All didactic lectures were updated to be inclusive of skin of color photographs and focus on disease presentations across a spectrum of skin tones. New lecture material was designed to provide instruction on culturally sensitive skin exams as well as SGM dermatoses and gender-affirming care practices. A new lecture on hair and scalp disease was also implemented.

Data collection began in August 2021. An optional, anonymous pre-rotation and post-rotation survey is distributed via email to third- and fourth-year medical students enrolled in a two- or four-week dermatology rotation at the Medical College of Wisconsin. There are approximately 1-4 students per rotation. The surveys, designed on Qualtrics, include Likert scale questions focused on students' comfort treating dermatoses on SOC and SGM patients, understanding of cultural haircare practices, and confidence discussing skin health across different cultural backgrounds. After completing the pre-rotation survey, each student is assigned a unique, randomly generated ID number to complete the post-module survey. Descriptive statistics were gathered from pre- and post-rotation surveys collected thus far to assess whether there may be an improvement in students' comfort treating the previously mentioned patient populations. Data collection is ongoing and expected to continue through Fall of 2024.

Results: To date, 29 pre-module surveys and 19 post-module surveys have been collected, with a total of 13 students completed both pre-module and post-module surveys. Survey responses of those who completed both pre- and post-module surveys were interpreted. Responses were categorized into Agree and Strongly Agree or Disagree and Strongly Disagree.

Prior to starting their rotation, 0/13 students felt confident discussing skin or hair care across different racial or cultural groups. After their rotation, 13/13 students felt more confident in this topic. Prior to their rotation, 2/13 students felt confident in their understanding of hair care practices and treatments for common hair disorders in patients with skin of color. After the rotation, 9/13 students felt confident in this topic. When asked whether students felt more confident in their ability to identify dermatologic conditions on light skin than on dark skin, 12/13 students agreed with this statement, whereas after completing the rotation 9/13 agreed. When asked whether students felt confident in their ability to discuss LGBTQ+ dermatologic concerns, 5/13 agreed prior to their rotation and 8/13 agreed after their rotation.

Potential Impact: Implementing cultural humility education in dermatologic clerkships may improve students' confidence in treating patients of different skin tones and cultural backgrounds. Additional efforts may be necessary to raise awareness of SGM dermatologic concerns and improve students' ability to identify dermatoses on darker skin tones.

References:

- 1) Ebede, T. and A. Papier, Disparities in dermatology educational resources. *J Am Acad Dermatol*, 2006. 55(4): p. 687-90.
- 2) Nijhawan, R.I., S.E. Jacob, and H. Woolery-Lloyd, Skin of color education in dermatology residency programs: does residency training reflect the changing demographics of the United States? *J Am Acad Dermatol*, 2008. 59(4): p. 615-8.
- 3) McKesey, J., et al., Cultural competence for the 21st century dermatologist practicing in the United States. *J Am Acad Dermatol*, 2017. 77(6): p. 1159-1169.

Cultivating Reflective Capacity to Enhance Ethical Engagement in Health Professions Students

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Problem Statement: Because ethics are necessary in healthcare, there is a need for effective strategies to foster ethical engagement in health professions students.

Rationale: Ethical engagement is essential to exceptional healthcare services. By engaging in ethical issues, health professionals are more equipped to provide whole-person care, make fair clinical decisions, and respect the autonomy of patients (1). Health professions education is the critical period when health professions students learn to manage ethical challenges, given the many opportunities for mentorship and collaboration (2). Hence, effective strategies are needed to cultivate ethical engagement in health professions students. Reflection has been found to be beneficial to the development of ethical engagement (3). However, its research tends to be qualitative and pertain to standalone reflective exercises. Cultivating reflective capacity, which translates into one's consistent habit of reflecting, may be a more powerful way to enhance ethical engagement in health professions students. However, the hypothesis could benefit from quantitative evidence.

Methods: To investigate if cultivating reflective capacity may support the development of ethical engagement in health professions students, we conducted a preliminary quantitative study to examine whether there is a relationship between reflective capacity and ethical engagement. We used the Reflective Practice Questionnaires (RPQ) and Santa Clara Ethics Scale (SCES) to collect data for health professions students' reflective capacity and professional, ethical engagement. Through convenience sampling, a total of 125 undergraduate and graduate students from various health professions (including nursing, physician assistant, respiratory care, radiography, sonography, and occupational therapy) participated in the study. To analyze the data, we performed Pearson correlation and regression analyses with bootstrapping.

Results: Statistical analyses indicated statistically significant strong, positive correlations between reflective capacity and ethical engagement in health professions students. Reflective capacity also predicted ethical engagement, although only two of its four components were significant to the prediction, including reflection-on-action and self-appraisal. Furthermore, statistical analyses indicated that there was not a statistically significant difference in the reflective capacity of undergraduate students and graduate students. However, there was a statistically significant difference in the professional, ethical engagement of undergraduate students and graduate students. Specifically, undergraduate health professions students demonstrated a higher level of professional, ethical engagement than those in graduate programs.

Potential Impact: Despite the need for additional research, the findings suggest that cultivating reflective capacity may enhance professional, ethical engagement in health professions students. Health professions educators are encouraged to teach students ways to reflect effectively and consistently, such as through structured reflection guides.

References:

- 1) Mashayekhi, J., Mafinejad, M. K., Changiz, T., Moosapour, H., Salari, P., Nedjat, S., & Larijani, B. (2021). Exploring medical ethics' implementation challenges: A qualitative study. *Journal of Education and Health Promotion*, 10, 66. https://doi.org/10.4103/jehp.jehp_766_20
- 2) Andersson, H., Svensson, A., Frank, C., Rantala, A., Holmberg, M., & Bremer, A. (2022). Ethics education to support ethical competence learning in healthcare: An integrative systematic review. *BMC Medical Ethics*, 23(1), 1-26. <https://doi.org/10.1186/s12910-022-00766-z>
- 3) Or, J., & Golba, E. (2023). A correlational study on reflective capacity and ethical engagement in adult learners of health professions. *Adult Learning*. <https://doi.org/10.1177/10451595231178279>

Evaluating Medical Students' Confidence in Treating Patients with Disabilities

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Idea: Assess the impact of a disability-focused curriculum on medical students' confidence in treating patients with disabilities.

Need: Quality healthcare for individuals with disabilities necessitates not only clinical skills but also a deep understanding of psychosocial aspects. This study addresses this gap by evaluating the impact of a disability-focused curriculum on medical students' confidence levels.

Healthcare providers often lack confidence in treating patients with disabilities due to inadequate exposure and training. The psychosocial aspects of disability, such as communication, empathy, and understanding patient experiences, are crucial for delivering effective care. Therefore, there is a compelling need to develop medical curricula that emphasize these facets.

The Population, Patient, Physician, and Professionalism (P4) course at Wayne State University School of Medicine (WSUSOM) incorporates a disability module. By assessing the changes in students' perspectives, self-confidence, and knowledge before and after this module, we can gauge its effectiveness in enhancing their preparedness for clinical rotations. This research not only contributes to medical education but also addresses the pressing need for more compassionate and comprehensive healthcare for patients with disabilities.

Methods: The study involves second-year medical students enrolled in the P4 course at WSUSOM, which is designed to provide a holistic understanding of the biopsychosocial aspects of medical practice.

As part of the course, second-year medical students participated in a dedicated disability module. This module was structured to enhance their understanding of disabilities, emphasizing not only the medical aspects but also the psychosocial dimensions. To assess the impact of this module, pre-surveys and post-surveys were administered to the students.

The pre-survey was conducted before the disability module to establish a baseline of students' perspectives, self-confidence, and knowledge related to individuals with disabilities. It included Likert-scale questions to gauge their attitudes toward disabilities in society and their perceived proficiency in caring for patients with disabilities.

Following the disability module, a post-survey was administered to the same group of students. This survey mirrored the pre-survey questions, allowing for a direct comparison of changes in their perspectives, confidence levels, and knowledge.

Both surveys were analyzed quantitatively to identify statistically significant shifts in students' perceptions and self-confidence regarding disability care. The data collected will be subjected to statistical tests to determine the module's impact on students' readiness to interact with and provide care for patients with disabilities.

Evaluation Plan: The program evaluation plan for this study involves a thorough analysis of the data collected from pre- and post-surveys administered to second-year medical students. The data will be evaluated using statistical methods to assess changes in students' perspectives, self-confidence, and knowledge related to the care of patients with disabilities.

Quantitative analysis will involve statistical tests, such as t-tests or chi-squared tests to determine if there are statistically significant differences between the pre-survey and post-survey responses. Specifically,

we will assess changes in students' attitudes toward disabilities in society, as well as their perceived proficiency in providing care to patients with disabilities.

Additionally, we will conduct subgroup analyses to identify any variations in the impact of the disability module based on students' prior exposure to disability-related topics or personal experiences.

The results of the program evaluation will provide valuable insights into the effectiveness of the disability-focused curriculum in enhancing medical students' confidence and preparedness to care for patients with disabilities.

Potential Impact: This research has the potential to revolutionize medical education by emphasizing the psychosocial dimensions of disability care. Improved confidence in treating patients with disabilities can lead to more compassionate and effective healthcare, addressing a critical gap in healthcare delivery.

References:

- 1) Ratakonda S, Argersinger DP, Auchus GC, McGowan C, Ship H, Wang DR, McKee MM. A call for disability health curricula in medical schools. *Trends Mol Med.* 2022 Dec;28(12):1012-1015. doi: 10.1016/j.molmed.2022.08.004. Epub 2022 Sep 12. PMID: 36109318.
- 2) Crane JM, Strickler JG, Lash AT, Macerollo A, Prokup JA, Rich KA, Robinson AC, Whalen Smith CN, Havercamp SM. Getting comfortable with disability: The short- and long-term effects of a clinical encounter. *Disabil Health J.* 2021 Apr;14(2):100993. doi: 10.1016/j.dhjo.2020.100993. Epub 2020 Sep 11. PMID: 33012692.

“What’s Your Spark?”: Integrative Critical Reflection of Social Determinants of Health

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Idea: SPARK (Structural Perspectives, Awareness, & Reflection at KPSOM) is a longitudinal assignment to gauge and promote medical student engagement of SDoH.

Need: Given the abundance of curricular content in undergraduate medical education (UME), we sought to develop a tool to assess medical student engagement with social determinants of health (SDoH) that leverages our school’s existing experiential learning activities. The need for reflective assessment arises from the intricacies of healthcare delivery and its interactions with social networks. Standardized knowledge acquisition often fails to capture the large variations in these systems. Despite increasing demand for SDoH instruction, there are limited curricular resources for medical students. When encountering structural barriers in clinical training, medical students often must grapple with the healthcare system’s limitations [1]. In Mezirow’s Transformative Learning Framework, critical reflection is crucial to navigating these dilemmas, inspiring exploration of skills and partnerships, and promoting professional responsibility [2]. By extending previous efforts to evaluate SDoH curricular impacts via student reflections [3], this project also aims to understand our medical students’ trajectory as they progress through our health systems science (HSS) curriculum.

Methods: Our medical school’s Community and Population Health (CPH) domain embedded in the HSS curriculum incorporates a series of 2-hour classroom discussions spanning the first two academic years (17 sessions total). Throughout curricular design, faculty outlined and refined the essential analytical frameworks and illustrative cases around contemporary CPH challenges. We also identified potential enhancement in how these classroom exercises could better reflect themes in other existing educational opportunities (e.g., community engagement, research projects, quality improvement initiatives, teamwork simulations, early clinical immersion, and previous life and professional experiences).

We launched the “SPARK” assignment in which students were asked to identify a community and population health challenge that aligns with their interests and experiences at the beginning of the first- and second-year CPH curriculum blocks. Following each session, a specific guiding question prompted students to reflect on how sessions’ core concepts would apply to their identified area of interest. First and second-year students submitted their reflections as a comprehensive essay compiling their analyses midway through a block. A similarly structured examination with open-ended questions was administered at the end of the block.

Evaluation Plan: Examples of analytical frameworks in our CPH curriculum included defining and measuring community and population health, stakeholder engagement, ethical analysis, needs assessments, structural competency and humility, prevention and intervention strategies, role of physician and institutional advocacy, and building communities of practice. These were explored through cases pertaining to social isolation in the elderly, school re-opening during the COVID pandemic, African American infant and maternal mortality, water contamination, emergency declaration on homelessness, and gun violence.

We plan to conduct a retrospective, iterative, thematic qualitative analysis of students’ written SPARK assignments grounded in King and Kitchener’s Reflective Judgment Model. In their summary of cognitive development, young adults learn to handle uncertainty via increasingly nuanced evaluation of information taken from an increasing number of sources. We also plan to identify the inspiration of students’ interests (e.g., clinical or personal experiences) and curricular activities prompting reflection (e.g., classroom discussion or community immersion). These data will inform refinements for the next iteration of assignments and curriculum.

Potential Impact: The ultimate goal is to facilitate professional accountability towards SDoH. We hope this analysis will inform how faculty can identify a learner's current attitudes towards SDoH and provide more specific recommendations toward reaching deeper levels of reflection. We seek to promote the role of critical reflection in lifelong learning around SDoH.

References:

- 1) Hassan IF, Bui T. "The Structural Analysis: Incorporating Structurally Competent Clinical Reasoning into Case-Based Presentations." *J Gen Intern Med.* 2022 Oct;37(13):3465-3470.
- 2) Kitchenham A. "The evolution of John Mezirow's transformative learning theory." *Journal of transformative education* 6.2 (2008): 104-123.
- 3) Ozone, S., et al. "Students' understanding of social determinants of health in a community-based curriculum: a general inductive approach for qualitative data analysis." *BMC Med Educ* 20, 470 (2020).

Mindfulness and Racial Justice: Tools to Facilitate Challenging Conversations

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Idea: To integrate mindfulness as a tool to facilitate engagement in conversations about implicit bias and structural racism.

Need: Structural racism is a major determinant of health. Understanding race as social construct and creating implicit bias action plans are key contributors to addressing structural racism in health care. Integrating mindfulness practices in undergraduate medical education contributes to increased awareness of implicit bias and facilitates difficult conversations about how physicians contribute to and can help mitigate the impact of structural racism in health care.

Methods: The Human Dimension Course is a three-year longitudinal course based on foundational principles of social determinants of health, including structural racism, as well as professional identity formation learning objectives including awareness and reflective practices. Mindfulness practices were integrated within three large and small group active learning sessions with undergraduate medical students as part of the required HD curriculum in order to facilitate conversations in three sessions related to implicit bias, race as a social construct and structural racism.

Evaluation Plan: Structured post-session student feedback related to Learning Objectives with quantitative and qualitative measures, for all three sessions.

Potential Impact: Integrative practical mindfulness techniques to increase awareness of implicit bias has a tremendous potential impact on medical education at all levels - undergraduate, graduate and post-graduate/faculty development.

References:

- 1) Burgess DJ, Beach MC, Saha S. Mindfulness practice: A promising approach to reducing the effects of clinician implicit bias on patients. *Patient Educ Couns*. 2017 Feb;100(2):372-376. doi: 10.1016/j.pec.2016.09.005. Epub 2016 Sep 15. PMID: 27665499.
- 2) Magee, R. V. (2016). Community-engaged mindfulness and social justice: An inquiry and call to action. In *Handbook of Mindfulness* (pp. 425-439). Springer, Cham.
- 3) Hirshberg MJ, Flook L, Moss EE, Enright RD, Davidson RJ. Integrating mindfulness and connection practices into preservice teacher education results in durable automatic race bias reductions. *J Sch Psychol*. 2022 Apr;91:50-64. doi: 10.1016/j.jsp.2021.12.002. Epub 2022 Jan 13. PMID: 35190079; PMCID: PMC8900452.

Assessing the Impact of a Social Determinants of Health Curriculum on Graduate Medical Students

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Problem Statement: Health disparities disproportionately affect vulnerable populations and many graduate medical students in Detroit are unaware of these inequities.

Rationale: Health disparities are “preventable differences in the burden of disease, injury, violence, or opportunities to achieve optimal health” that disproportionately affect vulnerable populations. Despite increased awareness of these disparities, the Accreditation Council for Graduate Medical Education has called on the graduate medical education (GME) community to take action against racism, implicit bias, and other forms of discrimination. The Social and Structural Determinants of Health Curriculum (SSDoH Curriculum) was developed by the Detroit Medical Center Department of GME to address the underlying causes and structures that perpetuate health inequity and disparities in Detroit. While existing curricula aim to target similar objectives, few focus on local disparities. Understanding the effectiveness of the SSDoH Curriculum may lead to wider adoption of the program in departments across Michigan.

Methods: The SSDoH Curriculum was modeled after curricula that emphasize cross-cultural understanding of patients at the structural level and ways structural inequities impact health outcomes (Hsia 2021, Metzl 2018, Metzl 2014). The SSDoH Curriculum included graduate medical students at Detroit Medical Center and consisted of 12 in-person didactic sessions during their 2022-23 training year. Participants (N = 55) completed pre- and post-curriculum surveys that evaluated their understanding of local SSDoH, structural inequities, and structural interventions. Data was collected on Qualtrics and statistical analyses were performed to determine if there was a difference in pre- and post-survey scores for each student. A paired t-test was performed and a $p < 0.05$ was used to determine if the results were statistically significant.

Results: Post-curriculum assessment of participants showed a 10% increase in understanding of how SSDoH impacts patients and influences the care they receive. Residents received near-perfect scores in the pre-curriculum evaluation on the 5 questions related to general SSDoH and structural inequities. Students improved by an average of 4 percentage points, with all achieving 100% on the post-curriculum evaluation. Participants showed the largest improvements on the 4 questions related to local SSDoH and structural inequities and 6 questions about local structural interventions. Residents improved by an average of 12.7 and 16.5 percentage points, respectively. Students improved most on a question about the Detroit Community Health Assessment report and another question addressing the social factors impacting patient health. Participants improved by an average of 38 percentage points on both questions.

Potential Impact: Our results suggest the SSDoH Curriculum could be applied to other urban residency programs to identify knowledge gaps in the root causes and structures that uphold local and regional health disparities. Implementation will positively impact the medical field by providing interventions that reduce the burdens of health disparities.

References:

- 1) Hsia, S.L., et al., Implementation and Evaluation of a 10-Week Health Equity Curriculum for Pharmacy Students. *American journal of pharmaceutical education*, 2021. 85(9).
- 2) Metzl, J.M., J. Petty, and O.V. Olowojoba, Using a structural competency framework to teach structural racism in pre-health education. *Social Science & Medicine*, 2018. 199: p. 189-201.
- 3) Metzl, J.M. and H. Hansen, Structural competency: theorizing a new medical engagement with stigma and inequality. *Social science & medicine*, 2014. 103: p. 126-133.

Assessing MAT Retention and Satisfaction of Latino and African American Men with SUD

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Idea: Assess characteristics and patient satisfaction of Latino and African American (AA) patients with SUD in Lomita MAT clinic.

Need: 46.3 million Americans struggle with substance-use disorder (SUD), among this group Latinos and AA men carry a disproportionate disease burden within their respective race categories as well as increased burden of legal sequelae including incarceration and police violence. Despite the overburden of SUD within AA and Latino communities, their rates for medication assisted treatment (MAT) enrollment are drastically lower relative to their white counterparts even when controlling for insurance status suggesting other structural issues pertaining to the realities of race and difference. To adequately address the lethal epidemic of overdoses in the era of fentanyl, understanding the intersectional struggles of marginalized groups is imperative. We plan to complete a retrospective chart review of specific determinants and a patient survey to help improve satisfaction and retention in evidence-based, lifesaving SUD treatment. Identifying barriers and patient experiences may can address the lethal treatment gap that exists for Latino and AA men.

Methods: We will perform a retrospective review of all scheduled MAT clinic appointments from January to December 2023 at the Lomita Family Medicine Clinic. We will focus on Latino and AA patients who self-identify as men and collect the following demographic information:

1. Age; 2. ACES Score ; 3. History of incarceration; 4. Hospital admission; 5. History of overdose; 6. Housing status; 7. Insurance status; 8. MAT treatment received: Naltrexone, Suboxone, etc.; 9. Number of MAT clinic appointments: Completed and No Show; 10. Preferred language; 11. Race/Ethnicity; 12. Stroke; 13. Substance use history/SUD ICD 10 Codes

We will also conduct a telephone survey of all patients to evaluate their reasons for or not participating in SUD treatment. Completed surveys will help us understand the knowledge, skills, and attitudes about SUD treatment. We specifically aim to call those patients that have not returned to Lomita MAT clinic and offer an appointment. For patients with overdose, we will offer and ensure the patient is taking MAT (i.e. suboxone), as well as have and know how to use Narcan.

Evaluation Plan: • Review the 2023 Lomita MAT clinic visits and identify characteristics of Latino and AA males with SUD that may be barriers and/or assets to participation

- Patient surveys will identify quality improvement and assurance metrics to improve recruitment and retention of patients
- Develop scheduling protocols that help ensure patients with documented overdose have follow up appointment
- For “no show” patients we will offer and aim to improve retention
- Analyze the mortality and participation of patients receiving MAT versus those patients that declined MAT
- We aim to identify barriers exacerbating racial disparities listed by surveying patients and then implementing reforms to cultivate increased MAT participation and retention by Latino and African American males with SUD, to more broadly reduce morbidity related to substance use

Potential Impact: Identifying and addressing barriers to receiving MAT can curtail morbidity and mortality from SUD. Once barriers are identified we aim to improve and obtain vital services that can improve continuity and decrease the disproportionate treatment gaps that exists for Latino and AA males in this lethal era of fentanyl.

References:

- 1) Center for Behavioral Health Statistics and Quality. (2022). 2021 National Survey on Drug Use and Health: Methodological summary and definitions. <https://www.samhsa.gov/data/report/2021-methodologicalsummary-and-definitions>
- 2) Eghaneyan BH, Sanchez K, Haeny AM, et al. Hispanic participants in the National Institute on Drug Abuse's Clinical Trials Network: A scoping review of two decades of research [published correction appears in *Addict Behav Rep.* 2021 Jan 21;13:100333] [published correction appears in *Addict Behav Rep.* 2023 Jan 13;17:100474]. *Addict Behav Rep.* 2020;12:100287. Published 2020 Jun 1. doi:10.1016/j.abrep.2020.100287
- 3) Mackey, K., Veazie, S., Anderson, J., Bourne, D., & Peterson, K. (2020). Barriers and facilitators to the use of medications for opioid use disorder: a rapid review. *Journal of General Internal Medicine*, 35(Suppl 3), 954–963. <https://doi.org/10.1007/s11606-020-06257-4>

Developing Engaged Dermatologic Scholarship with Pediatric Patients Through Community Learning

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Idea: Preventing health inequities through early intervention using an engaged scholarship model with pediatric patients.

Need: Engaged scholarship models that are continuously being adopted by medical educators are an effective way to deliver preventative health training to our communities (1). This is especially important for teaching pediatric patients in a manner that is digestible and age-appropriate. Unfortunately, the current medical curriculum does not currently integrate active community involvement and education sufficiently. Cutaneous skin diseases manifest differently on skin of color and providing early exposure to pediatric patients on best skin health practices can prevent worse prognosis in the future (2). Addressing these inequalities in access and education through diversity, equity, and inclusion initiatives are an effective way to improve community health and have an enduring impact on pediatric patients' lives (3).

Methods: Through the American Association Dermatology's (AAD) Good Skin Grant a team of multi-institutional medical students obtained the funding and training to deliver age-appropriate skin health and knowledge training to over seventy 5th grade students in the Minneapolis Public Schools district. The medical student educators were trained by attending various training and question sessions held by the AAD as well as viewing and revising pre-prepared teaching modules. The training included interactive activities and demonstrations that outlined the basics about the physiology of the skin, acne, healthy skin habits, and skin interactions with plants and bugs. These trainings were delivered by coordinating a designated weekly guest speaker time in the auditorium of the school over the course of two months. The goal of these training sessions was to provide a measurable improvement in the knowledge of these students as was assessed by providing a pre and post lesson survey before the first session and after the last session through the help of the teachers at the school.

Evaluation Plan: Medical School student educators representing each Minnesota medical school were thoroughly trained through the completion of modules developed by the American Academy of Dermatologists and taught 5th grade students on skin physiology. This training has been very positively received both by the students and their teachers. This training is ongoing and student mastery of the content will be assessed by comparing pre and post survey results.

Potential Impact: Many students vocalized increased interest in dermatology and medicine as a whole throughout the trainings. Students appreciated and resonated with having medical students who were alumni of the Minneapolis Public Schools district provide the lessons, reinforcing the importance of representation in medicine.

References:

- 1) Franz N. A holistic model of engaged scholarship: Telling the story across higher education's missions. *Journal of Higher Education Outreach and Engagement*. 2009;13(4):31-50.
- 2) Dowd MD. Treatment and prevention of pediatric sunburn. *Pediatr Ann* 2019 Jun 01;48(6):e213-e214. [doi: 10.3928/19382359-20190520-02] [Medline: 31185109]
- 3) Desai SR, Khanna R, Glass D, et al. Embracing diversity in dermatology: Creation of a culture of equity and inclusion in dermatology. *Int J Womens Dermatol*. 2021;7(4):378-382. Published 2021 Aug 5. doi:10.1016/j.ijwd.2021.08.002

Improving Environmental Sustainability in Medicine Through Medical Aid Initiative

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Idea: To collect unused, excess medical supplies from hospitals and distribute them to global health volunteer groups and disaster relief organizations.

Need: Due to hospital disposal policies following discharges or surgeries, millions of dollars of unused supplies are discarded as medical waste and their incineration creates significant air pollution, harming our environment (1). UCLA Health itself produced 35.1 million pounds of medical waste between 2020 and 2022 (2). To address this, the Medical Aid Initiative (MAI), an undergraduate organization at UCLA, collects excess medical supplies from the UCLA Health system that would have otherwise been discarded and distributes them, at no cost, across the world to under-resourced regions, giving them a new life. Domestically, our inventory has been used in Los Angeles by healthcare providers to deliver necessary care, and internationally, MAI has supplied donations to Beirut after the tragic explosion, Haiti after the earthquake, and Ukraine following the Russian invasion. The significant inequalities in medical supply distribution have only been exacerbated in recent years (3), yet MAI's medical waste redistribution answers the call for health equity while simultaneously considering the environment amid the rising climate crisis.

Methods: To reduce healthcare waste and transition to a more environmentally sustainable system, MAI follows a three-pillar mission model: Sustainability, Distribution, and Awareness. Sustainability is embodied in our collection, sorting, and storing of unused medical supplies within the UCLA Health System. Any healthcare entity, most often international missions, screening programs, and local laboratories can examine MAI's warehouse inventory and complete our donation request form to obtain supplies. MAI then packages the supplies and prepares them for distribution, upholding our second pillar. Because our supplies help in educational and domestic projects outside UCLA Health, we aim to spread awareness of our model to other medicine-oriented institutions through online advocacy, panels with allied health professionals, and collaborations with healthcare students. Our primary approach to expanding into medical education is through a newly established Research, Advocacy, and Projects (RAP) committee. In October 2023, RAP will work with UCLA Nursing students to audit and catalog hospital waste using Z-5 scanners. Nurses will audit their waste without a supply cart for one week, followed by a second audit of the same length in which nurses choose their supplies beforehand via a supply cart. Comparing these two groups allows us to determine the effectiveness of personal supply carts in preventing excess waste and guide our future endeavors in combating the problem from its source.

Evaluation Plan: MAI will determine our model's overall effectiveness through: 1) regular check-ins with parties to determine overall usage of our donated medical supplies, 2) calculating the cost saved by using redistributed supplies, 3) assessing the amount of medical waste prevented from entering landfills (in pounds), and 4) measuring the reduction in greenhouse gas emissions. Any replications of our model also contribute to effectiveness. We will maintain contact with affiliated organizations to determine how we can better achieve our goals and work together to create a more sustainable future.

RAP's current project will determine its effectiveness through: 1) comparing waste audits to see how much waste was reduced, 2) the feasibility of providing nurses with their own supply carts, and 3) propelling future action against the largest origins of waste.

Potential Impact: MAI has donated nearly 7000 pounds in supplies to over 22 countries across the world and has saved over \$400,000 since its inception in 2018. As the gap in medical supply distribution

continues to widen due to various systemic challenges, MAI's mission to promote health equity via medical waste redistribution becomes all the more essential.

References:

- 1) "Health-Care Waste." World Health Organization, February 8, 2018. <https://www.who.int/news-room/fact-sheets/detail/health-care-waste>.
- 2) "Waste Reduction." UCLA Health, 2022. <https://www.uclahealth.org/sustainability/our-progress/waste-reduction>.
- 3) Joyce P., Maron F., Reddy P.S. Good Public Governance in a Global Pandemic. The International Institute of Administrative Sciences; Brussels, Belgium: 2020. IIAS Public Governance Series.

Utilizing EHR Technology and Protocols to Increase Prescription of Buprenorphine/Naloxone

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HonorHealth Family Medicine Residency Program

Idea: Utilizing an EHR and clinical protocols to increase resident and faculty comfort in prescribing buprenorphine/naloxone to treat opioid use disorder.

Need: It has been reported that over 130 people pass away daily of opioid overdose in America, and it has been declared a national epidemic. Among the highest risk patients for overdose are those with opioid use disorder (OUD).

Buprenorphine/naloxone (bup/nx) is an evidence-based treatment for OUD and has been shown to improve patient survival rates, increase rates of retention in treatment, and increase patient quality of life. Bup/nx continues to be underutilized by primary care physicians. Studies have shown that by providing training to clinicians in prescribing bup/nx for OUD, have increased willingness to diagnose OUD. However, despite the increased willingness to screen and diagnose OUD, there remains a discrepancy in physicians being willing to initiate and manage bup/nx.

Our institution has an addiction medicine fellowship, our residents often spend time working with the fellowship on rotations and educational experiences. In addition, we require all residents to complete an 8-hour course on medication-assisted treatment during their first year of residency. Despite our robust curriculum, our residents like many other physicians reported that they do not feel comfortable in initiating and managing patients with bup/nx.

Methods: The role of this study is to provide a clinic-based protocol and procedures and to evaluate how educating the providers in the outpatient setting on readily available protocols and materials improves their comfort and willingness to initiate the prescription of bup/nx.

Resources were created for the clinic including a step-by-step protocol for initiating bup/nx, patient treatment agreement, and an easy-to-follow home induction handout. In addition, note templates were created within the EHR to help guide the clinician during the clinical encounter.

These materials were presented to the residents and faculty during a didactic session. Prior to the presentation a survey was done assessing the training in MAT by individual residents, their comfort in diagnosing OUD as well as in prescribing MAT, and assessed their experience in so doing. After the didactic session, a post-survey was provided to assess resident willingness and comfort in prescribing bup/nx.

Evaluation Plan: Five PGY-1 residents, four PGY-2 residents, five PGY-3 residents, and five faculty members participated in the didactics session and pre- and post-survey. Prior to the didactic session, 95% of participants indicated they had previous training in prescribing bup/nx. However, no participants had prescribed bup/nx. On a likert scale of 1-5 (1-uncomfortable, 5-comfortable), only 5.26% of participants indicated a score of above 4 in the willingness and comfort level to initiating buprenorphine/naloxone if they were managing a patient with OUD. After our session was completed, 100% of participants responded that they have a useful and easily accessible resource to initiate buprenorphine/naloxone. In the willingness and comfort level with initiating bup/nx, participants who rated at a 4 or 5 increased to 88.22% in the post-survey results.

Initial results are promising, this didactic session on clinic protocols and EHR template will continue for all upcoming resident classes in the future. In addition, we plan to offer our protocols to other residencies at our institution. Long term, we will track prescriptions of bup/nx at our clinic and at an institutional level as a measure of success.

Potential Impact: By disseminating clinic-based protocols and tools within the EHR, we hope to increase the prescribing prevalence of bup/nx during residency training. Previous studies have shown that familiarization of bup/nx during residency training is carried forward into a physician's career and in turn will help fight the opioid epidemic.

References:

- 1) Connery HS. Medication-assisted treatment of opioid use disorder: review of the evidence and future directions. *Harv Rev Psychiatry* 2015;23:63–75. [PubMed] [Google Scholar]
- 2) Foti K, Heyward J, Tajanlangit M, Meek K, Jones C, Kolodny A, Alexander GC. Primary care physicians' preparedness to treat opioid use disorder in the United States: A cross-sectional survey. *Drug Alcohol Depend.* 2021 Aug 1;225:108811. doi: 10.1016/j.drugalcdep.2021.108811. Epub 2021 Jun 18. PMID: 34175786.
- 3) Gardner-Buckshaw SL, Perzynski AT, Spieth R, Khaira P, Delos Reyes C, Novak L, Kropp D, Caron A, Boltri JM. Increasing Primary Care Utilization of Medication-Assisted Treatment (MAT) for Opioid Use Disorder. *J Am Board Fam Med.* 2023 Apr 3;36(2):251-266. doi: 10.3122/jabfm.2022.220281R2. Epub 2023 Mar 22. PMID: 36948541.

Street Kicks: a Detroit-Based Shoe Initiative

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Problem Statement: Street Kicks is a Detroit-based student led organization which aims to send all patients home with adequate footwear.

Rationale: Street Kicks' mission is to ensure that all patients leave the hospital wearing suitable footwear. Founded by two medical students who witnessed a homeless patient being discharged without shoes, Street Kicks has evolved into a sustainable resource that provides patients with both socks and shoes upon their departure. Many patients, especially those experiencing homelessness, may have ill-fitting or unsupportive shoes, putting them at risk of injury and long-term physical dysfunction. Existing literature has indicated higher rates of foot pain and functional limitations within the homeless population. By providing our patients with appropriate shoes, Street Kicks aims to prevent the foot injuries and limitations that disproportionately affect the homeless population. Additionally, this support may reduce barriers to mobility and exercise. Patients from underserved communities require advocates to identify solutions to systemic issues that perpetuate health disparities.

Methods: The primary target learners for Street Kicks are patients, particularly those experiencing homelessness, who are discharged from Henry Ford Hospital without adequate footwear. Additionally, the program involves healthcare professionals and volunteers who facilitate access to the donation-based shoe closet. The goal is to provide patients with proper footwear upon discharge from the hospital to prevent foot injuries and long-term health problems. The content of the project includes collecting, disinfecting, and sorting donated shoes and socks, maintaining an inventory, and ensuring that patients in need have access to suitable footwear. There is no specified project length, as it is an ongoing initiative. The location of the project is within Henry Ford Hospital and has plans for expansion to DMC Hospital. Data collection primarily involves tracking the number of patients who receive footwear, the types of shoes and socks provided, and any feedback or outcomes related to the project's impact. The project may collect data through patient records and feedback forms. Data analysis includes assessing the effectiveness of providing footwear in preventing foot injuries and fostering a better relationship between homeless individuals and the healthcare system. The analysis aims to demonstrate the benefits of the initiative and may inform future expansion plans to other hospitals.

Results: Street Kicks has an inventory of approximately 150 pairs of men's and women's shoes and 250 pairs of new Bombas socks. The shoes were acquired through donation and were disinfected and sorted by volunteers. Bombas socks were donated to Street Kicks through the Bombas Giving Program. Many patients who have benefited have arrived at the hospital without footwear or had their shoes misplaced over their admission. When this happens, a member of the patient's care team can access the shoe closet to find them adequate footwear. Since its inception Street Kicks has provided approximately 70 pairs of shoes and numerous socks to patients. Additionally, Street Kicks been recognized on Detroit Fox2 news. Looking ahead, Street Kicks plans to expand efforts into local Detroit Medical Center Hospital.

Potential Impact: By providing patients with footwear, Street Kicks is preventing foot injuries that disproportionately affect the homeless population and empowering patients with better mobility. We hope to develop more shoe closets to ensure all patients have access to proper footwear.

References:

- 1) Mullins, R.M., Mannix, R.E., Marshall, N.J. et al. Responding to foot health needs of people experiencing homelessness: the role of a publicly funded community-based podiatry service. *J Foot Ankle Res* 15, 15 (2022). <https://doi.org/10.1186/s13047-022-00518-7>

- 2) Schwarzkopf R, Perretta DJ, Russell TA, Sheskier SC. Foot and shoe size mismatch in three different New York City populations. *J Foot Ankle Surg.* 2011 Jul-Aug;50(4):391-4. doi: 10.1053/j.jfas.2011.04.030. Epub 2011 May 26. PMID: 21616688
- 3) Buldt, A. K., & Menz, H. B. (2018). Incorrectly fitted footwear, foot pain and foot disorders: a systematic search and narrative review of the literature. *Journal of foot and ankle research*, 11, 43. <https://doi.org/10.1186/s13047-018-0284-z>

Expansion of the Wayne State University School of Medicine Innovation Hub

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Idea: Students with backgrounds in quality improvement (QI) can educate peers on QI methods and patient safety initiatives.

Need: The Association of American Medical Colleges (AAMC) has identified quality improvement (QI) and patient safety (PS) as essential skills for graduating medical students and practicing physicians. Despite the importance of QIPS in medical education, having students participate in meaningful projects within this focus is challenging. In previous years, the WSUSOM chapter of the Institute for Healthcare Improvement piloted an Innovations Hub (IH) to help a student clinic implement a QI project with the goal of educating students while improving care. This year, we expanded the IH to create QI initiatives at a variety of student-run free clinics. Focus areas included patient chronic disease safety, translator services, and standard operating procedures while educating peers on improvement methodology.

Methods: To identify organizations interested in QIPS initiatives, a pre-survey was distributed to all student-run clinics at WSUSOM. IHI then scheduled initial meetings to educate organizations on the science of improvement and assess their needs. Next, IHI members created project charters outlining quality improvement projects. After presenting project charters, projects began with concurrent education for medical student leaders regarding improvement strategies. The IH aims to educate medical student leaders on QIPS initiatives over the course of their second year in medical school through continuous meetings and Plan-Do-Study-Act (PDSA) cycles using QI methodology.

Evaluation Plan: First, we established a standard operating procedure (SOP) for a Street Medicine group with a high training rate. Leaders will use the SOP to optimize efficiency and maximize training quality. Comparing feedback from training pre- and post-implementation of the SOP will determine both trainee satisfaction and the effectiveness of training sessions.

Second, we created a chronic disease management strategy for a clinic. By initiating effective conversations regarding chronic disease perception, surveying patients, and tracking resource distribution, the project finds effective long-term strategies for individualized disease management. Third, we developed a network of student interpreters. The project allows student-run clinics to improve patient satisfaction and gives students space to utilize language skills. Both student interpreters and student-run clinic leaders will be surveyed to evaluate efficiency, student comfort and development, and quality of care.

Overall, IHI will evaluate the effectiveness of the IH in teaching students QIPS strategies through a survey comparison. Student leaders will provide feedback on their ability to design and implement projects by analyzing improvement data and implementing PDSA cycles.

Potential Impact: Expanding the IH provides an opportunity to educate student leaders on QI methodology and PS science through real projects within their organizations. The ongoing success of the projects shows a strong future for IHI's collaboration with organization leaders to create individualized projects while learning about quality improvement.

References:

- 1) Gould, Bruce E. MD; Grey, Michael R. MD, MPH; Huntington, Charles G. PA, MPH; Gruman, Cynthia LCSW, PhD; Rosen, Jonathan H. MD; Storey, Eileen MD; Abrahamson, Lynn MPH; Conaty, Ann Marie; Curry, Leslie MPH, PhD; Ferreira, Michelle; Harrington, Karen L. LCSW; Paturzo, Deborah MS; Van Hoof, Thomas J. MD, MA. Improving Patient Care Outcomes by Teaching Quality Improvement to

Medical Students in Community-based Practices. *Academic Medicine* 77(10):p 1011-1018, October 2002.

- 2) McGeorge, E., Coughlan, C., Fawcett, M. et al. Quality improvement education for medical students: a near-peer pilot study. *BMC Med Educ* 20, 128 (2020). <https://doi.org/10.1186/s12909-020-02020-9>

Implementation of a Medical Student-Run Orthopaedic Clinic for the Underserved

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Problem Statement: A community clinic serving the uninsured has difficulty providing subspecialty care for their patients.

Rationale: The uninsured and underinsured populations struggle to access affordable healthcare, placing them at risk for poor health outcomes. Local community clinics attempt to address these needs, but oftentimes, specialty care such as orthopaedics is lacking or non-existent. Even patients with insurance, such as Medicaid, have trouble accessing orthopaedic treatment. One particular study found a Medicaid refusal rate of 32.2% across regular-sized orthopaedic practices. The need to provide orthopedic care for the uninsured and underinsured is paramount. Herein we outline a method of partnering with a local community clinic, utilizing medical students to address this need.

Methods: The Fourth Street Clinic (FSC) is a community clinic in Salt Lake City providing primary care services for the uninsured and those experiencing homelessness through a network of volunteer providers and health professionals. Their motto is 'Homelessness hurts, healthcare helps'. In January 2023, the University of Utah Orthopaedic Department partnered with FSC to establish a medical student-run monthly orthopaedic clinic. The organization consists of medical student leaders (usually interested in Orthopaedics and in their 3rd or 4th years), younger medical students who will later replace the 'leaders', one orthopaedic resident, and an orthopaedic attending. The med student leaders perform chart review and ensure that patients obtain proper imaging before their clinic visit. These student leaders communicate pertinent orders and information with FSC staff to prepare for the monthly clinic. Medical students work together to interview patients, perform physical exams, and present findings to the attending surgeon and orthopedic resident. History and physical education is provided to the students at this point followed by any medication orders, splint/DME orders, or procedures such as injections. If a patient will require surgery, they are listed for such and hospital donated services are solicited. These visits come at no cost to patients given the partnership with FSC.

Results: From January 2023 to September 2023 there were a total of 24 visits. These included 18 (75.0%) new patient and 6 (25.0%) follow up visits. The average patient age was 51.8 ± 13 and average time from symptom onset to visit was 21.4 ± 31 months. Most visits were conducted in Spanish at 15 (62.5%), while 8 (33.3%) were conducted in English and 1 (4.2%) in Ukrainian. A total of 17 (70.8%) patients were housed while 7 (29.2%) were homeless. Uninsured patients made up most visits at 18 (75.0%) while 5 (20.8%) had Medicaid and 1 (4.2%) had Blue Cross Blue Shield. Chief complaints included knee pain 8 (33.3%), hip pain 5 (20.8%), foot/ankle pain 4 (16.7%), hand complaints 4 (16.7%), and back pain 2 (8.3%). Throughout these visits, we performed 1 knee aspiration, 1 hip injection, 4 knee injections, 3 hand injections, and 1 subtalar injection with the use of a mini X-ray machine.

Potential Impact: To date, 24 patients with a variety of chief complaints have been able to receive orthopedic care due to the establishment of this student-led clinic. Orthopedic surgeons looking to provide specialty care for the underserved can adopt a similar partnership and implement the same organizational structure to achieve similar outcomes.

References:

- 1) Handcox JE, Saucedo JM, Rose RA, Corley FG, Brady CI. Providing Orthopaedic Care to Vulnerably Underserved Patients: AOA Critical Issues. *JBJS*. 2022 Oct 5;104(19):e84. doi:10.2106/JBJS.21.01349

- 2) Shi W, Anastasio A, Guisse NF, Faraj R, Fakunle OP, Easley K, et al. Impact of Insurance and Practice Type on Access to Orthopaedic Sports Medicine. *Orthop J Sports Med.* 2020 Jul;8(7):2325967120933696. doi:10.1177/2325967120933696
- 3) Tolbert: Key facts about the uninsured population - Google Scholar [Internet]. [cited 2023 Sep 15]; Available from: https://scholar.google.com/scholar_lookup?title=Key+Facts+About+the+Uninsured+Population&publication_year=2019&author=J+Tolbert&author=K+Orgera&author=N+Singer&author=A+Damico

Investigating Health Literacy Levels of Individuals Enrolled in Ged and English Learning Programs

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Idea: A survey administered to adults enrolled in GED and English learning classes to assess their health literacy.

Need: Health literacy is defined as the ability for someone to obtain and understand health information to make informed decisions about their healthcare. Numerous studies have shown that low health literacy leads to poor health outcomes, making health literacy a significant social determinant of health (1). Low health literacy has been linked to populations such as minorities, persons with limited educational background and English proficiency skills, as well as those of low socioeconomic status (2). The Literacy Alliance (LA) is an organization in Fort Wayne, Indiana, that provides individuals with a limited educational background or low English proficiency an opportunity to obtain a high school diploma, skill certificates, and positions in the workforce. LA wants to understand if their program has an impact on improving students' health literacy. Through survey administration, this project aims to determine if there are connections between a student's education level and their comfort with navigating the healthcare system. The results of the survey will allow changes to the Literacy Alliance's programs and put their students in contact with resources to improve their health literacy.

Methods: The goal of the project is to examine the current states of comfort with navigating the healthcare system in adults who are seeking a GED and those who are learning English as a second language. The population sample is recruited through LA, a local non-profit organization focused on providing literacy education in the Fort Wayne community. Any student who is getting their GED or taking English classes with LA are eligible to complete an anonymous survey that assesses their current level of comfort with visiting a doctor, expressing their medical concerns, and advocating for their medical care. The surveys are completed once, prior to the start of class. Responses to the surveys are analyzed to examine the state of comfort in navigating the medical system between native vs non-native English speakers and between levels of English proficiency. The overall comfort levels in adult learners will also be assessed. If the majority of students are reporting low levels of comfort and inability to express medical concerns, community/classroom resources will be created in order to address these issues. The results will then be presented to LA in order to provide them with more evidentiary support for their mission of increasing literacy and improving health outcomes in Fort Wayne. The project is estimated to take place from September 2023 through February 2024, pending approval from Indiana University School of Medicine Institutional Review Board.

Evaluation Plan: A student interest and skill set survey will be given prior to the start of the research to help select students best fit for the project. Throughout the project, periodic email check-ins will be sent to our community partner, Literary Alliance, and GroupMe messages will be sent to the participating medical students to assess project satisfaction and also project progress. At the end of the project, satisfaction surveys will be administered to our community partner, and all the medical students involved to further assess the strengths and weaknesses of our research project.

To measure self-improvement in project planning, data collection, data entry and analysis, and presentation skills, pre and post-surveys will be given to the medical students. Furthermore, pre and post-surveys will be administered to assess medical students' satisfaction on engaging in a community-based research project, learning how to administer and analyze survey data, understanding social determinants of health, and addressing real-world health-related community issues.

Potential Impact: Assessing comfort levels during healthcare visits highlights areas of anxiety that non-native English speakers and low educational background individuals face when navigating the healthcare system. This project can provide interventions that LA can implement to combat issues these individuals face to increase health literacy and health outcomes.

References:

- 1) Nutbeam D, Lloyd JE. Understanding and Responding to Health Literacy as a Social Determinant of Health. *Annu Rev Public Health*. 2021;42:159-173. doi:10.1146/annurev-publhealth-090419-102529
- 2) Schillinger D. The Intersections Between Social Determinants of Health, Health Literacy, and Health Disparities. *Stud Health Technol Inform*. 2020;269:22-41. doi:10.3233/SHTI200020

Integrating Longitudinal Community-Based Experiential Learning Across Medical School Classes

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Idea: Meaningfully prepare medical students to build longitudinal symbiotic relationships between their institution, community, and colleagues.

Need: Medical student-led consulting groups have demonstrated their value by facilitating student engagement with the communities they serve while also teaching transferable skills relevant to community outreach, problem-solving, and team-based collaboration (Portney et al., 2019). However, despite their success, maintaining the continuity of projects between successive student cohorts has frequently posed challenges such as changing priorities, sustaining community relationships, and a lack of institutional memory. Establishing long-term relationships with community organizations not only bolsters trust and provides students with the opportunity to track and assess the sustained impact of their interventions over time, but also offers these organizations a consistent source of dedicated support and expertise, reducing the need for repeated onboarding and ensuring that interventions align seamlessly with their evolving needs and goals. To contribute to the success of the projects and ensure the longevity of our community connections, several solutions can be implemented such as thorough documentation of standard operating procedures, structured mentorship programs, frequent project handovers, and integration of faculty advisors.

Methods: Inspired by initiatives at select medical schools, medical student-led pro-bono consulting groups will collaborate with local organizations to identify vital community needs (Portney et al., 2019). Students will work closely with community leaders to design, implement, and assess solutions, offering students real-world experience relevant to their future careers while bettering the community. Sustaining community partnerships across classes is paramount. To ensure a seamless transition for both the students and local partners, the student leaders of the consulting organization would span across each class, allowing upperclassmen to mentor the underclassmen and promoting expertise retention. Executive board elections would be done at the end of the first-year students' first semester, after they have had the opportunity to participate in an ongoing community project under the guidance of an upperclassman. Detailed transition documents will be maintained in an accessible location. Handoff meetings will be conducted between the newly elected executive member and the outgoing leadership. Outgoing leadership will also facilitate a transition meeting between the incoming leadership and community partner to foster vertical relationships and mutual trust. A committed faculty advisor will be integral to overseeing these transitions. This longitudinal experiential learning model will mutually benefit medical students and the communities whom the collaborative projects aim to serve.

Evaluation Plan: The evaluation process of such a program would involve ensuring that the relationship between the community and the institution is maintained longitudinally. This would likely be done by having evaluations that are sent to community partners annually that would ask about the quality of the institution as a partner as well as the interpersonal communication that has occurred between the institution and community partner. A similar evaluation would also be posed to community members to examine the relationship that the institution has with individuals in the community, which would reveal the impact that the institution may have on the community of which they are inherently a part. These evaluations could then be posed within the institution itself to ask about the value of community member relationships. The culmination of these evaluations would allow for the institution to better evaluate the impact that it has in the community and improve relationships longitudinally for the institution. Additionally, this allows for medical students to develop relationships in the community that will help their peers as well as their own future relationships as physicians in this same community.

Potential Impact: By facilitating a seamless transition of leadership within these student-led consulting groups, we will foster more trusting, meaningful, and mutually beneficial relationships with our community

partners. Furthermore, by performing regimented evaluations of the quality of these partnerships, we will cultivate robust long-term collaborations.

References:

- 1) Portney DS, VonAchen P, Standiford T, Carey MR, Vu J, Kirst N, Zink B. Medical Student Consulting: Providing Students Leadership and Business Opportunities While Positively Impacting the Community. MedEdPORTAL. 2019 Oct 18;15:10838. doi: 10.15766/mep_2374-8265.10838. PMID: 31773064; PMCID: PMC6869981.

Identifying Barriers to Address a Free Clinic's High Missed Appointment Rates

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Idea: A survey for missed appointments identifies obstacles patients face, aiming to enhance healthcare accessibility and decrease missed appointment rates.

Need: Addressing health disparities has been at the forefront of challenges faced in the medical field. Social determinants of health (SDOH) has a significant impact on patient populations, often contributing to health disparities. SDOH refers to environmental factors that contribute to one's overall health and longevity (1). A person's socioeconomic status, education, access to fresh, healthy foods, and many other factors contribute significantly to SDOH. Matthew 25, a free clinic in Fort Wayne, Indiana, serves a large immigrant population and other Fort Wayne natives who are in a low socioeconomic status (2,3). While the clinic helps to bridge the gap in healthcare by providing free healthcare services, it is hypothesized that SDOH are influencing the quality of care the clinic can provide. Despite establishing long-term care with each patient, there is a high no-show rate, which makes it difficult to provide quality healthcare. Through administering written surveys to the patients, we hope to identify patterns in which we can intervene and mitigate disparities. This project aims to connect patients with community resources to meet their needs outside the clinic, increasing healthcare accessibility and decreasing no-show rates.

Methods: This is a single-center prospective questionnaire-based research project designed to determine the reasons for missed appointments and what resources can assist in reducing the no-show rate. This study is pending approval from the Indiana University Institutional Review Board. A verbal explanation of the intention of the study will be given to potential participants before they complete the questionnaire. The questionnaire will be anonymous to promote participation. We plan to conduct this questionnaire for three months or until the target response of 100 is reached.

The questionnaire consists of 10 questions. Any patient under the age of 18 years, communicates exclusively in any language other than English or Spanish, or has substantial cognitive impairment will be excluded. The data will be stored on Microsoft Excel Spreadsheet (Microsoft Corporation, USA). The ultimate objective of this project is to implement interventions that will mitigate the no-show rate at Matthew 25.

Evaluation Plan: Prior to the start of the research project, a questionnaire gauging student interest and skill set such as Spanish fluency and data analysis will be given. At the end of the research project, a satisfaction survey will be provided to our community partner, Matthew 25, and to all the medical students involved in the research project. The satisfaction survey will determine the strengths and weaknesses of our planning, data collection, data analysis, and product creation processes to help improve for future research projects. In addition to satisfaction surveys, periodic email check-ins will be sent to our community partner and regular GroupMe messages will be sent to the participating medical students to further access project satisfaction and progress.

Pre and post-surveys will be given to the medical students participating in the research project to measure their self-improvement in project planning, data collection, data entry and analysis, and presentation skills. Pre and post-surveys will be administered to assess medical students' satisfaction on engaging in a community-based research project, learning how to administer and analyze survey data, understanding SDOH, and addressing real-world health-related community issues.

Potential Impact: By identifying the challenges patients face when attending their clinic visits, this survey will reveal areas for improvement that can bolster healthcare accessibility. Enhancing patient

access to healthcare allows patients to miss fewer appointments and have overall improved health outcomes.

References:

- 1) Phelan JC, Link BG, Tehranifar P. Social conditions as fundamental causes of health inequalities: theory, evidence, and policy implications. *J Health Soc Behav.* 2010;51 Suppl:S28-S40. doi:10.1177/0022146510383498
- 2) Chang CD. Social Determinants of Health and Health Disparities Among Immigrants and their Children. *Curr Probl Pediatr Adolesc Health Care.* 2019;49(1):23-30. doi:10.1016/j.cppeds.2018.11.009
- 3) Adler NE, Newman K. Socioeconomic disparities in health: pathways and policies. *Health Aff (Millwood).* 2002;21(2):60-76. doi:10.1377/hlthaff.21.2.60

Impact of Covid-19 On Well-Child Visits in San Bernardino County

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Idea: There is a dearth in the literature discussing the impact of the COVID-19 pandemic on pediatric healthcare outcomes during developmental periods.

Need: Extensive knowledge exists regarding the use of telehealth across pediatric subspecialties, both before and in response to the COVID-19 pandemic. However, there remains a notable gap in our understanding of how telehealth adoption has influenced the practice of well-child visits among pediatric patients. The pandemic introduced a significant degree of variability in telehealth implementation within pediatrics, which led to fluctuations in well-child visit rates. These routine check-ups play a pivotal role in providing a comprehensive assessment of pediatric patients and give clinicians the opportunity to offer age-appropriate guidance to the child's caregivers. This crucial aspect of healthcare maintenance addresses lifestyle habits that pose risks for certain diseases, provides counseling to prevent future injuries, and ensures that children are reaching important developmental milestones. In the realm of pediatric healthcare, well-child visits also guarantee timely adherence to vaccination schedules, aligning with both the child's age and developmental stage. The primary objective of our study is to assess the effect of the COVID-19 pandemic on pediatric patients' access to and the quality of preventative healthcare services.

Methods: In the quantitative phase of our study, we have included pediatric patients, aged 0-18 years old, who underwent well-child visits at Arrowhead Regional Medical Center (ARMC) between March 15, 2020-June 15, 2021. We intend to acquire data from the ARMC Pediatric Clinic in order to analyze the impact of the COVID-19 pandemic on the volume of well-child visits, both in-person and via telehealth, and to compare these figures with pre- and post-pandemic periods.

The qualitative phase of our study encompasses two key participant groups: parents of the pediatric patients included in the quantitative data set, and healthcare providers from ARMC involved in pediatric well-child care. The examination of their experiences will be facilitated through surveys and focus group interviews. To ensure inclusivity and accessibility, our surveys will be available in both English and Spanish. Using semi-structured interview techniques, we will encourage healthcare providers to expand on their experiences and the factors that influenced their ability to provide care during the pandemic. Likewise, we plan to conduct semi-structured interviews with parents to gain insight into how the pandemic affected the healthcare their child received. Through this multifaceted approach, we aim to provide a comprehensive understanding of the pandemic's impact on pediatric patients' access to and the quality of preventative healthcare services.

Evaluation Plan: Participants in the study will be asked to assess their agreement or disagreement with statements using a Likert scale ranging from 1-5. Statements presented to parents include items such as "I could not attend a well-child visit due to a decrease in the number of providers willing to meet online for a telehealth appointment" and "I plan to continue to use telehealth as a way to attend well-child visits after the COVID-19 pandemic." Likewise, statements presented to healthcare providers will include items such as "I conducted more in-person well-child visits than virtual well-child visits during the COVID-19 pandemic" and "I was able to provide the same standard of care when performing well-child visits virtually compared to in-person visits." Following the collection of survey responses, both parents and healthcare providers will have the opportunity to provide additional insights during separate focus group sessions. These sessions will employ semi-structured interview questions to encourage participants to elaborate on their survey responses. The collected information will be thematically coded to systematically analyze the impacts of COVID-19 on well-child visits within the pediatric population of San Bernardino County.

Potential Impact: This research endeavor aims to provide strategies to strengthen pediatric healthcare, especially in times of unexpected disruptions, to ensure high quality care. Our hope is to create a more comprehensive grasp of health system planning, while also recognizing the factors that either hinder or support access to and the quality of pediatric care.

References:

- 1) Riley, M., Locke, A. B., & Skye, E. P. (2011). Health maintenance in school-aged children: Part I. History, physical examination, screening, and immunizations. *American family physician*, 83(6), 683-688.
- 2) Turner, K. (2018). Well-child visits for infants and young children. *American Family Physician*, 98(6), 347-353.
- 3) Uscher-Pines, L., McCullough, C., Dworsky, M. S., Sousa, J., Predmore, Z., Ray, K., ... & Schulson, L. (2022). Use of telehealth across pediatric subspecialties before and during the COVID-19 pandemic. *JAMA network open*, 5(3), e224759-e224759.

Ai-Prompted Explanations of Common Primary Care Diagnoses to Aid Patient Understanding

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Idea: Evaluation and comparison of AI explanations given to patients about common primary care diagnoses to aid both medical students and physicians.

Need: The increasingly advanced development of artificial intelligence has brought both new challenges as well as possible opportunities to the field of healthcare, particularly primary care. The use of generative AI (GAI) such as ChatGPT is still yet to be implemented in medical education and practice despite the possibility to provide better patient outcomes, population health, and health equity (Liaw, 2022). Continued research is necessary to demonstrate the effectiveness of GAI as well as implementation into medical education settings. While these resources have been shown to be clearer and are better organized than traditional sources, true evidence-based sources are still more comprehensive regarding the information presented (Breeding, 2023). The usability of GAI can allow physicians a more seamless approach to explaining complex medical concepts in lay terms—improving patient-physician communication and thus patient autonomy. As GAI development continues, the accuracy of the GAI's information must be evaluated. Additional research is needed to identify the differences between the many types of GAI and which should be used for medical education.

Methods: Three of the largest GAI, ChatGPT (OpenAI GPT 3.5), Google Bard (Google LaMDA), and HuggingChat (Meta AI Llama 2) will be used to generate patient education leaflets about common diagnoses and topics discussed in a primary care setting. These will include primary hypertension, hyperlipidemia, type 2 diabetes mellitus, hypothyroidism, gastroesophageal reflux disease, atherosclerosis, and immunizations. The same question will be asked of all three GAI with the same stem for each different topic. The questions will all be inputted on the same day and responses will be recorded instantly. Each question will be asked in a separate new instance, or chat, and only the first response will be recorded. This method will provide us with accurate representation of the initial responses given by these GAI which can then be evaluated for accuracy by physicians.

Evaluation Plan: All recorded GAI responses will be graded by 10 board certified physicians based on an adapted rubric that assesses both accuracy and ease of understanding (Cao, 2023). Accuracy will be assessed with a graded system where 0 will be given for any false information, a 1 for incomplete answers or any irrelevant information, and a 2 for information that is true and relevant. Ease of understanding will be assessed with a 0 given for any unclear explanation, a 1 for a clear response with some medical terminology, and a 2 for clear response without medical jargon that may confuse the patient. All grading will be blinded without knowing which responses come from which GAI to minimize bias. The individual score for each diagnosis will be analyzed and compared first followed by an aggregate score of all responses for each GAI.

Potential Impact: GAI services have shown great potential to improve over time. Understanding the accuracy of the GAI responses is a necessity for implementation into medical education that can provide an opportune way for medical students to implement AI into their education leading to improved communication and conversations with patients.

References:

- 1) Liaw W, Kueper JK, Lin S, Bazemore A, Kakadiaris I. Competencies for the Use of Artificial Intelligence in Primary Care. *Ann Fam Med.* 2022 Nov-Dec;20(6):559-563. doi: 10.1370/afm.2887. PMID: 36443071; PMCID: PMC9705044.
- 2) Breeding T, Martinez B, Patel H, Nasef H, Arif H, Nakayama D, Elkbuli A. The Utilization of ChatGPT in Reshaping Future Medical Education and Learning Perspectives: A Curse or a Blessing? *Am Surg.*

2023 Jun 13;31348231180950. doi: 10.1177/00031348231180950. Epub ahead of print. PMID: 37309705.

- 3) Cao JJ, Kwon DH, Ghaziani TT, Kwo P, Tse G, Kesselman A, Kamaya A, Tse JR. Accuracy of Information Provided by ChatGPT Regarding Liver Cancer Surveillance and Diagnosis. *AJR Am J Roentgenol.* 2023 Oct;221(4):556-559. doi: 10.2214/AJR.23.29493. Epub 2023 May 24. PMID: 37222278.

Utilizing Suturing Workshops to Introduce High School Students to Healthcare Skills and Careers

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Problem Statement: There remains a lack of literature studying interventions that expose high school students to healthcare skills and careers.

Rationale: Underrepresented minorities recognized by the Association of American Medical Colleges include African Americans, Mexican Americans, Puerto Ricans, American Indians, Alaska Natives, Native Hawaiians, and other Pacific Islanders.¹⁻³ These groups make up more than a quarter of the U.S. population but less than 13% of students enrolled in U.S. MD degree-granting medical schools, and less than 9% of practicing physicians in the United States.¹⁻³ Increasing minority representation in medicine, although identified as an opportunity to improve clinical care and patient satisfaction, is challenging. One barrier is that successfully matriculating into medical school requires preparation that often begins in high school. High school outreach in minority communities is therefore important in increasing awareness and accessibility of healthcare careers. Our intervention was hosting suturing workshops for high school students to promote minority interest in healthcare skills and careers.

Methods: 15 suturing workshops were held at a large, urban high school in Fall 2022. 1 90-minute workshop was held for every 9th and 12th grade science class during class time. Each workshop was led by a team of 4 medical students and began with a 15-minute presentation and 15-minute question-and-answer session about healthcare careers. Students were then divided into 4 groups to learn the instrument tie and square knot from 1 medical student. 2 students shared 1 suture pad, 1 needle driver, 1 scissor, 1 forceps, and 1 medical-grade suture with needle. During workshops, medical students encouraged high school students to further their interests in science and medicine. Students were asked to complete an anonymous, optional post-workshop survey which evaluated the level of student agreement with statements related to workshop content, organization, and instruction quality. A scholarship awarded to medical students demonstrating civic responsibility and a desire to strengthen the local community funded this initiative. Descriptive statistics and independent samples t test were implemented.

Results: Of 288 high students attending 15 suturing workshops, 148 (51.4%) completed the post-workshop survey. Self-reported knowledge about suturing on a 0-5 scale increased between the start and end of the workshop (2.7 vs. 4.1, $P < 0.001$). 98 (66.2%) students strongly agreed that presentations were clear, organized, and easy to follow; an additional 38 (25.7%) agreed. 110 (74.3%) students strongly agreed that instructors demonstrated suturing effectively; an additional 24 (16.2%) agreed. 104 (70.3%) students strongly agreed that instructors used class time effectively; an additional 31 (20.9%) agreed. 119 (80.4%) students strongly agreed that instructors were engaging, available, and helpful; an additional 15 (10.1%) agreed. 104 (70.3%) students strongly agreed that they enjoyed and benefits from the workshop; an additional 27 (18.2%) agreed. 105 (70.9%) students strongly agreed that they would recommend this workshop to their classmates; an additional 27 (18.2%) agreed. Remaining students either were neutral, disagreed, or strongly disagreed with these 6 statements.

Potential Impact: High school students attending suturing workshops were highly receptive to medical student outreach. The overwhelming majority strongly agreed that suturing workshops were organized and taught well. Suturing workshops appear to have viability in exposing predominantly minority high school students to healthcare skills and careers.

References:

- 1) Orom, Heather, Teresa Semalulu, and Willie Underwood III. "The social and learning environments experienced by underrepresented minority medical students: a narrative review." *Academic Medicine* 88, no. 11 (2013): 1765-1777.
- 2) Orfield, William Silen, Carole Teperow, Carolyn Howard, and Joan Reede. "Educational benefits of diversity in medical school: a survey of students." *Academic Medicine* 78, no. 5 (2003): 460-466.
- 3) Saha, Somnath, Gretchen Guiton, Paul F. Wimmers, and LuAnn Wilkerson. "Student body racial and ethnic composition and diversity-related outcomes in US medical schools." *Jama* 300, no. 10 (2008): 1135-1145.

Patient Comfort with Bilingual Medical Students in the Free Clinic Setting

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Problem Statement: Linguistic barriers are a source of inequity in the healthcare system, especially in communities with large immigrant populations.

Rationale: Language barriers are associated with lower quality of health care and poorer health outcomes. Patient dissatisfaction and adverse events have been shown to be more prevalent among limited English proficiency (LEP) patients than English-speaking patients. Correlations exist between patient-reported adverse effects from medications and English proficiency, with LEP patients reporting higher incidences of drug complications. Providing language-concordant care, which is defined as care in which patients and physicians speak the same language, can improve access to care for LEP patients. In San Bernardino County, approximately 15% of the population speaks English less than very well, a rate that is approximately double the national average. In attempts to increase access to care for LEP patients in San Bernardino, we utilized bilingual, Spanish-speaking medical students as providers and interpreters for patients of the Inland Empire Free Clinic.

Methods: Eighteen first or second-year medical students served as bilingual care providers. Seven bilingual students served as an interpreter for another English-speaking student doctor who served as the primary provider. Twenty-five total patients were enrolled in our study. A Spanish-speaking provider administered an oral survey to patients after receiving care regarding their experience with either a bilingual provider or interpreter. Patients interacting with bilingual providers were asked the following questions: 1) How do you rate the level of attention received today by your assigned student doctor (1 being terrible and 10 being excellent)? 2) How comfortable did you feel speaking Spanish with the student doctor on a scale from 1 to 10 (1 being terrible and 10 being excellent)? 3) Did you talk about a sensitive topic with your assigned student doctor in Spanish? If so, how comfortable did you feel during that conversation (1 being minimum comfort level and 10 being maximum comfort level)? Patients interacting with an interpreter were asked the following questions: 1) How do you rate the level of attention received today by your assigned interpreter (1 being terrible and 10 being excellent)? 2) How comfortable did you feel speaking Spanish with the interpreter on a scale from 1 to 10 (1 being terrible and 10 being excellent)? 3) Did you talk about a sensitive topic with your assigned interpreter? If so, how comfortable did you feel during that conversation?

Results: For patients receiving care from a bilingual student, 11 participants rated the level of attention received by the Spanish-speaking healthcare provider 10/10, 3 rated the level of attention received 9/10, 2 rated the level of attention received 8/10, and 2 rated the level of attention received 7/10. For patients using an interpreter, 1 patient rated the level of attention received as 10/10, 2 rated the level of attention received a 7/10, 2 rated the level of attention received as 5/10, 1 rated the level of attention received as 4/10, and 1 rated the level of attention received 3/10. For patients receiving care from a bilingual student, 12 participants rated their comfort level 10/10, 1 rated their comfort level 9/10, 2 rated their comfort level 8/10, 2 rated their comfort level 7/10, and 1 rated their comfort level 5/10. For the group interacting with an interpreter, 1 participant rated their comfort speaking to an interpreter as 10/10, 1 participant rated their comfort as 7/10, 1 participant rated their comfort as 6/10, 2 participants rated their comfort 5/10, 1 participant rated their comfort 3/10, and 1 participant rated their comfort 1/10. Eight patients interacting with bilingual providers rated their comfort level discussing sensitive topics as 10/10, 2 rated their comfort level as 9/10, and 1 rated their comfort level as 6/10. For those interacting with an interpreter, one patient rated their comfort level as 6/10 while 2 rated their comfort level as 4/10.

Potential Impact: LEP patients feel more comfortable interacting with bilingual providers in free clinic settings. Utilizing medical students as bilingual providers may improve patient access to care.

References:

- 1) Karliner LS, Kim SE, Meltzer DO, Auerbach AD. Influence of language barriers on outcomes of hospital care for general medicine inpatients. *J Hosp Med.* 2010;5:276–82.
- 2) Wilson E, Chen AHM, Grumbach K, Wang F, Fernandez A. Effects of limited English proficiency and physician language on health care comprehension. *J Gen Intern Med.* 2005;20:800–6.
- 3) Fernandez A, Schillinger D, Warton EM, Adler N, Moffet HH, Schenker Y, et al. Language barriers, physician-patient language concordance, and glycemic control among insured Latinos with diabetes: the Diabetes Study of Northern California (DISTANCE). *J Gen Intern Med.* 2011;26:170–6.

A Novel Digital Learning Platform: Merging Mnemonic Techniques with Game-Based LearningBland, Tyler
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Idea: Medimon: A game-based digital learning platform for medical education, integrating mnemonic-based curriculum in a monster-taming genre.

Need: In the dynamic realm of medical education, effective and engaging teaching methods are imperative. Traditional strategies often lead to burnout and stress among students. With the rise of digital technology, there's a pressing need to adapt and align with modern learners. Medimon, inspired by the popular gaming franchise Pokémon, offers an innovative solution to this challenge. By merging game-based learning with mnemonic-based medical science education, Medimon addresses the gap, providing a refreshing, inclusive, and adaptable method. It not only challenges conventional norms but also resonates with the digital inclinations of current learners, advocating for a pivotal shift in health education.

Methods: Target Learners: Medical students and individuals interested in health education.

Goal: To make medical science education engaging and effective through game-based learning.

Content: Medimon, a game-based digital learning platform in the monster-taming genre, focuses on medical sciences. Each character represents a cell, organ system, or disease, delivering knowledge through mnemonics building directly into the design, location, and storyline. Students learn by collecting, battling, and leveling up monsters mimicking real-world medical items.

Length and Timing: Continuous and self-paced, allowing learners to engage at their convenience.

Training Site: Digital platforms (PC).

Interactive Methods: Stealth education through visual mnemonic design is employed, subtly infusing educational content into the experience of the platform. While engaging with the platform, students concurrently acquire knowledge on medical sciences, ensuring an immersive learning experience. To see our designs, visit www.medimon.games

Evaluation Plan: Data Collection: Utilize in-game analytics to collect statistics on player performance, focusing on completed quests that mirror USMLE Step 1 questions transformed into a fetch system.

Success Metrics: Define key performance indicators (KPIs) such as the number of quests completed, time taken per quest, and player accuracy.

Feedback Mechanism: Incorporate in-game surveys post-quest completion to gather players' feedback on the learning experience and any areas of improvement.

Comparative Analysis: Compare student performance with preclinical phase exam scores to assess the game's efficacy in imparting medical knowledge. These will be compared with exam scores of students who do not utilize Medimon as a study tool.

Continuous Improvement: Use gathered data to refine game content, enhance the learning experience, and ensure alignment with USMLE Step 1 standards. The insights derived from the evaluation will guide future updates, ensuring Medimon remains an effective and engaging learning tool.

Potential Impact: Medimon revolutionizes health education through game-base learning combined with mnemonics strategies, addressing student burnout. Challenging traditional norms, it showcases adaptability in the evolving medical education landscape. Its innovative approach promises lasting impact in future health education.

References:

- 1) o Gentry, S. V., Gauthier, A., Ehrstrom, B. L., Wortley, D., Lilienthal, A., Car, L. T., ... & Dünser, A. (2019). Serious gaming and gamification education in health professions: systematic review. *Journal of medical Internet research*, 21(3), e12994.

Advancing Health Equity Through a Collaborative Biomedical Device Innovation Program

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Idea: We created a program that promotes healthcare innovation with a health equity lens through collaboration between medical and engineering students.

Need: Healthcare innovation is continuing to expand, with spending on medical technologies reaching \$173.1 billion in 2019, which accounted for 5.2% of national health expenditures (1). Biodesign is a process that utilizes clinical needs-finding as a method to center patient care in the process of innovation. United States medical education curricula often lack programs that teach biodesign, especially starting at the undergraduate medical student level, and even fewer that prioritize health equity in their innovation curriculum. Maddineni and Kumar assessed seven US medical schools with innovation curricula and state the importance of needs-finding in medical education curricula as a backbone of innovation and health equity (2). Many additional strategies can be utilized to incorporate equity in the medical innovation process including diverse representation of students, product affordability, community engagement, and equitable distribution. Bluegrass Biodesign is one of the first biodesign innovation programs for medical students to focus on equity by evaluating these projects using health equity measures, lecturing on equitable customer discovery, and working with local partners to develop projects specific to our community.

Methods: Bluegrass Biodesign is a nine-month program designed to teach medical students how to innovate and solve healthcare needs while bolstering health equity. Students are divided into seven teams based on specialty: adult cardiology, pediatric cardiology, critical care and pulmonology, neurosurgery, urology, radiology, and otolaryngology.

The program goes through three stages— needs-finding, screening and refining, and prototype development. The needs-finding stage involves shadowing clinical mentors and identifying fifteen potential opportunities for innovation. After identifying a primary clinical need, they are paired with undergraduate engineering students to begin the prototyping process and create designs that address their need. Lastly, the teams create a proof-of-concept prototype. The students present deliverables at each stage and the program culminates in a final pitch day.

The teams simultaneously attend didactics and workshops led by experts in biodesign, business, and engineering. Health equity is incorporated throughout the program. The customer discovery lectures highlight equity as a pillar of the biodesign process and students must consider structural barriers to care in needs-finding. We work with local partners, such as the Health Equity Innovation Hub, that connects our program to the communities our innovations would serve. Students also perform a cost-effective analysis and present a health equity impact plane to evaluate their proposed solutions (3).

Evaluation Plan: Our program is evaluated by surveys from Bluegrass Biodesign members, including engineering and medical students, physician and engineering mentors, lecturers, and community partners. We had baseline surveys that indicate participants' comfort with the biodesign process. Our end-of-program surveys include questions on improvement of lectures and workshops, subject areas of interest we should add, and the quality of guidance from physician and engineering mentors. We also have a panel of expert judges in medicine, business, engineering, and innovation that evaluate student projects and give feedback for the final pitch day presentation. The criteria for projects are market potential, feasibility, impact on health equity, presentation, and creativity. Market potential is defined by the impact of the innovation in addressing a need in healthcare. Feasibility is the likelihood of the solution to be successfully developed. Impact on health equity determines how the solution addresses health accessibility, cost-effectiveness, or underserved populations. Presentation is shown by the team's ability

to communicate their unmet clinical need and the impact of their solution. Finally, creativity is shown by the novelty of the team's design.

Potential Impact: Programs such as Bluegrass Biodesign equip medical students with the necessary tools and understanding to innovate as they continue through their medical careers. It also shifts the approach in medical innovation to prioritize accessibility and cost-effectiveness, while focusing on historically marginalized patient populations.

References:

- 1) Donahoe, Gerald, and Guy King. "Estimates of medical device spending in the United States." AdvaMed (2009).
- 2) Maddineni, Sainiteesh, and Wasan Kumar. "The need for need-finding in medical education." *Nature Biotechnology* 41.7 (2023): 1028-1030.
- 3) Cookson, Richard, et al. "Using cost-effectiveness analysis to address health equity concerns." *Value in Health* 20.2 (2017): 206-212.

Fractures.App: An Easy-To-Use, Free, Bedside App for Fracture Management

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Idea: Revolutionizing fracture management with Fractures.app, a free bedside tool delivering immobilization techniques & management insights.

Need: Fracture care, a complex field, often demands instant access to in-depth knowledge and expert insight, particularly in resource-limited settings. Currently, practitioners face challenges accessing this vital information quickly, as it's mostly found in dense textbooks or requires extensive web searches.

Fractures.app addresses this gap by providing a free, user-friendly tool for bedside fracture management. Users can easily identify fracture patterns and get informed on appropriate immobilization techniques and management pearls. This application democratizes medical knowledge, offering a rapid refresher for seasoned practitioners and an effective learning tool for those in the early stages of their careers.

Given the global burden of musculoskeletal conditions and the trend towards mobile health solutions, Fractures.app fulfills an unmet need in healthcare. It underscores the potential of technology in revolutionizing care delivery, improving patient outcomes.

Methods: Target learners for Fractures.app are healthcare practitioners of all levels - from medical students and interns to seasoned emergency medicine physicians seeking a rapid refresher tool. The overarching goal is to democratize fracture management knowledge, making it easily accessible and simplifying decision-making at the point of care.

The content of the project encapsulates a comprehensive guide to fracture management. Users select an affected bone, identify the relevant fracture pattern, and receive insights into appropriate immobilization techniques, splint application instructions, and key management pearls.

As a mobile application, Fractures.app is designed for continuous self-paced learning and reference. The project is ongoing, with plans for regular content updates based on emerging best practices in fracture management and user feedback.

In terms of interactivity, the application is designed to be engaging and user-centric. It incorporates visual aids like illustrations for a more immersive learning experience. Furthermore, the user interface is intuitive, enabling users to quickly navigate through various bones and fracture types.

Evaluation Plan: The evaluation of Fractures.app will be driven by a blend of user analytics, user feedback, and objective outcome measures.

Firstly, we will rely on in-app analytics to understand user behaviors, including features most utilized, time spent on the app, and recurrent usability issues. This data will serve as a compass for iterative refinements of the app's interface and functionality.

Secondly, direct user feedback will be solicited via an in-app feedback feature. This will allow users to share their experiences, suggest improvements, and report bugs. Feedback will be categorized and prioritized to guide updates, ensuring the app remains responsive to the needs of its user base.

Lastly, we plan to conduct pre- and post-implementation surveys amongst a sample of users to quantify the impact of Fractures.app on their confidence and proficiency in fracture management. Key indicators might include reduction in time to decision, perceived ease of use, and self-reported improvement in fracture management skills.

Potential Impact: Fractures.app could revolutionize fracture management, democratizing access to critical knowledge, and improving patient outcomes. It has potential to serve as a model for leveraging technology to address other healthcare knowledge gaps, inspiring wider digital transformation.

References:

- 1) Court-Brown, C. M., Caesar, B. (2006). Epidemiology of adult fractures: A review. *Injury*, 37(8), 691–697.
- 2) Ventola, C. L. (2014). Mobile Devices and Apps for Health Care Professionals: Uses and Benefits. *Pharmacy and Therapeutics*, 39(5), 356–364.
- 3) Bullock, A., Dimond, R., Webb, K., Lovatt, J., Hardyman, W., Stacey, M. (2015). How a mobile app supports the learning and practice of newly qualified doctors in the UK: an intervention study. *BMC Medical Education*, 15, 71.

Standardized Informational Webpages to Support International Students in United States M.D. Schools

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Idea: Creating standardized information pages for international applicants on U.S. medical school sites to promote transparency and inclusion in admissions.

Need: International students (i.e. non-U.S. citizens/Permanent Residents) are vastly underrepresented in medical school, and comprise less than 2% of matriculants each year. [1] Based on our current analysis, only 17.5% of 153 US medical schools accept all international students and an additional 27% of institutions accept international students on a case-by-case basis. There is significant variability in the quality of information available for international students across schools, AAMC, and MSAR websites with notable discrepancies between sources; in fact no information about financial aid is available for 38% of the schools that accept international students. In a recent survey, 8/10 international pre-medical students reported challenges finding institutions that accept international students. [2] There is a significant need for standardizing informational pages to overcome the insufficient and contradictory information currently available on admissions criteria, financial aid processes, and organizational support for international students. [1,2,3] This is important to further diversity and inclusion efforts, as international students from around the world bring a range of perspectives and experience in medicine. [2]

Methods: We identified examples of “international friendly” web pages from 20 schools (17 private 3 public) based on quality and completion of admissions information provided for students, language used for describing consideration of international students for admission, access to/showcasing previous international students, and clear definition of institutional aid or suggested alternate opportunities for funding. Using friendly/supportive language (eg. offering reasons for their exclusion without doubting their ability to succeed, stating if a school’s policies may change), even when international students cannot be admitted due to federal or state policies, is crucial for creating an inclusive national landscape for international students. Using these web pages as examples, we created a template for institutions to present key information to support international pre-medical applicants using friendly language. This templates provides language for admission, financial support, and other important information (eg. visas provided, resources on campus, etc) for both schools that can and cannot accept international students. The template also links key resources that international students can refer to outside of the institutional pages. Once web pages based on templates are broadly implemented, we will create a centralized website that can directly extract content from institutional pages to allow for easy and reliable access to pertinent information.

Evaluation Plan: We will evaluate if our recommendations encourage more centralized, standardized, and transparent policies that serve to better inform pre-medical international students. First, we will conduct an email survey of the 84 medical schools that do not admit international students to understand the rationale behind their restrictions. Any misconceptions they have about international students’ ability to succeed will be addressed on our standardized information page. We will then host focus groups with international students to receive feedback on the templates before sharing our standardized information page with friendly language to US allopathic medical schools nationwide to encourage implementation. Next, we will quantitatively note how many schools implement the page. The reach and clarity of the implemented pages will be evaluated by measuring website analytics and surveying international pre-medical students through social media outreach pre and post implementation. We will supplement this short-term analysis by also tracking the number of international applicants, admits, and matriculants using data from the American Association of Medical Colleges pre and post implementation over time.

Potential Impact: International students are a historically underrepresented group within medicine, but are often left out of traditional definitions, conversations, and resources devoted to URiM groups. If effective, our standardized information page can support students who will diversify the cultures, languages, and perspectives represented in US medical schools.

References:

- 1) 2022 FACTS: Applicants and Matriculants Data. Association of American Medical Colleges.
- 2) Jaber Chehayeb R, SenthilKumar G, Saade Z, Gallo Marin B, Aghagoli G, Virji AZ. Examining the First Peer-to-Peer Mentorship Program (F1Doctors) for International Medical Students. *J Interdiscip Stud Educ.* 2022;11(1):102-125.
- 3) SenthilKumar G, Peraci MMS. Leveraging Virtual Platforms to Overcome the Minority Tax Among International Medical Students and Professionals. *Wmj.* 2022;121(4):251.

Implementing Artificial Intelligence to Upskill and Surveillance Current and Future Health Providers

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Idea: We describe an application of AI to teach, upskill and remediate in real time for all healthcare workers including medical, nursing students.

Need: Personal protective equipment (PPE) donning and doffing is an essential skill for hospital and healthcare workers (HCW) that is paramount to reduce the risks of exogenous transmission to a susceptible host. Artificial intelligence (AI) has a significant role in health care and industry with its ability to analyse large samples of data to make predictions. Reported by Mahmood et al, there is still a lack of expertise in donning and doffing technique by frontline HCW, and that interactive workshops are required to train HCW as well as upskill, which is labour intensive. Many residents may not previously received any formal training for optimal use of PPE, allowing their unsafe habits to impede on their PPE to carry out their duty. It presented the issue of substandard practices due to suboptimal education and intensive staffing requirements to achieve this which accords to the need of appropriate PPE training in healthcare settings. Therefore, this presents an opportunity for AI technology to fill this space to not only act as a screening tool but also a training tool.

Methods: The study design is an extension to our work at Macquarie University and Hospital published in the previous study in Preda et al, where we aim to further train this AI platform (SXR AI program) in a supervised learning method to further increase its accuracy and uses for training and education with the purpose of upskilling individuals that will be or currently working in a healthcare setting. This is a prospective cohort study on which quantitative and qualitative data are collected. The cohort is students training in health professions, HCW in the university hospital and scientist laboratory staff working in this space. Data will be collected on the platform use with teaches, trains and remediates the steps of PPE donning and doffing to track the progress on their skills in using PPE with the assist of the platform.

The study has been conducted at MQ Health, Macquarie University in Sydney Australia which consist of a 144-bed University teaching hospital which consist of many HCW's from different specialties, wards and clinics.

Evaluation Plan: The main outcome of this study is firstly evaluating the accuracy of AI detection for donning and doffing comparing to the double buddy system, eliciting its ability to correctly screen individuals' ability to don and doff PPE appropriately and ultimately upskill them. As a result, the imaging recorded on the camera will be internally recorded on the SXR AI program and transformed into numerical data. This data will then be exported into Microsoft Excel. From this data, statistical analysis will be performed through GraphPad Prism 9. To determine the accuracy of the AI, the percentage sum of 'pass' events among total events will be used. Its statistical significance will be also assessed through exact binominal and McNemar's tests of a 2 x 2 contingency table with AI assessment against buddy post intervention standard as exposures, and with 'pass' and 'fail' as outcomes, similarly to the study done by Preda et al. The plans for reporting the results will include summarised tables to show the comparisons between the AI platform and the double buddy system. Flowcharts may be used to show the detailed steps of donning and doffing data collection steps.

Potential Impact: Successful application has the ability to upskill students and HCW on PPE donning and doffing. In addition it is a teaching and remediation too as well as for audit and compliance in the workplace. This platform can be easily upscaled and transformed to other industries that utilise PPE e.g., food, chemical, mining, pharmaceutical, construction.

References:

- 1) Preda VA, Jayapadman A, Zacharakis A, et al. Using artificial intelligence for personal protective equipment guidance for healthcare workers in the COVID-19 pandemic and beyond. *Commun Dis Intell* (2018). 2022 Aug 18;46:51. doi: 10.33321/cdi.2022.46.51.
- 2) Mosher C, Mukhtar F, Alnaami N, et al. Donning and doffing of personal protective equipment: Perceived effectiveness of virtual simulation training to decrease COVID-19 transmission and contraction. *Cureus Published Online First*: 2022. doi:10.7759/cureus.22943
- 3) Barratt, R., Wyer, M., Hor, Sy. et al. Medical interns' reflections on their training in use of personal protective equipment. *BMC Med Educ* 20, 328 (2020). <https://doi.org/10.1186/s12909-020-02238-7>

Dungeon Master Approach in Teaching Biochemistry in Medical School Education

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Idea: The idea is that using a gaming approach RPG (D&D) in teaching biochemistry will enhance the current generation of medical students' education.

Need: The authors want to approach the instruction of Biochemistry in the Medical School Curriculum using a "D and D" methodology in a gaming environment to foster competition amongst the teams in the classroom and hopefully improve and retaining learning. Also expected is that the students would be substantially engaged compared to a standard classroom. It is expected that since the current generation of students in medical school grew up on role playing online video games, that this D&D pedagogy may be an approach to use in learning for this generation.

Methods: . The modern medical student class being composed mainly of Millennials and GenZers brings new expectations in medical school education compared to prior generations which have not grown up on the internet with online role play gaming (RPG). This initial class provides a unique opportunity to assess student learning and knowledge retention from the beginning in a new and unique curriculum in a longitudinal manor. The M1 class meets twice a week for two hours each to expand and enrich the weekly CBL materials which is being developed using primarily clinical vignettes. The course instructor(s) leading the class guides the students through the clinical scenarios. This reminded me of the fantasy role playing game Dundeons and Dragons (D&D) originally designed by MRs. Gygax and Mr. Ameson, which was first published in 1974. The Dungeon Master leads the players through a scenario requiring reasoning and critical think, very much like the course instructor does in class with the students. The authors want to approach the instruction of Biochemistry in the Medical School Curriculum using a "D and D" methodology in a gaming environment to foster competition amongst the teams in the classroom and hopefully improve and retaining learning. Also expected is that the students would be substantially engaged compared to a standard classroom. It is expected that since the current generation of students in medical school grew up on role playing online video games.

Evaluation Plan: . The classes will be followed in a longitudinal manner through a series of anonymous surveys focusing on the different styles of teaching (gaming or not) of the class along with comparing the overall class averages on the summative exams of the different modules taught by other instructors not using gamification. Engagement will be judged again using surveys of both the students and the faculty.

Potential Impact: We hope to demonstrate that using D&D as a model for medical school education will enhance learning and retention of the large quantity of difficult materials necessary to learn in medical school education.

References:

- 1) Comparing Millennial and Generation X Medical Students at One Medical School
Borges, Nicole J. PhD; Manuel, R Stephen PhD; Elam, Carol L. EdD; Jones, Bonnie J. PhD
Academic Medicine 81(6):p 571-576, June 2006
- 2) Is Medical Education Ready for Generation Z?
Jodie Eckleberry-Hunt, PhD, ABPP David Lick, MD Ronald Hunt, MD
J Grad Med Educ. 2018 Aug; 10(4): 378–381.
doi: 10.4300/JGME-D-18-00466.1
- 3) Generation Z: What's Next?
Geoffrey A. Talmon Medical Science Educator (2019) volume 29, pages9–11

Enhancing Interactivity in an Asynchronous Online Curriculum for Diverse Health Professions Students

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Idea: Incorporating a discussion board feature into an asynchronous online learning system for an interdisciplinary cohort of health professions students.

Need: Critical reflection is essential in health professions education. It allows students to make meaning of the content and apply it to their training, and future practice. California Area Health Education Center (CA AHEC) has 12 centers located throughout California with the mission of improving access to quality health care for underserved populations of California through academic and community partnerships. The AHEC Scholars program was established in 2018 as a requirement from the Health Resources and Services Administration. The purpose of the Scholars program is to provide health professions students the opportunity to explore primary care with an emphasis on community health and interdisciplinary practice in medically underserved communities. Part of that experience is completing 40 hours of asynchronous online curriculum with nine modules on important health topics, such as team-based care, quality improvement, and community engagement. The curriculum consists of readings, videos, and exercises, and was followed by an individual critical reflection. Based on focus group findings, the students requested a way to interact with their peers statewide, so the individual reflections are being replaced with a discussion board.

Methods: For the year 2023-2024, we have 133 scholars whose educational levels range from high school to graduate students and are from multiple disciplines, e.g., community health workers, medical students, public health students, dental students, and nursing students. The purpose of the change in curriculum is to increase the sense of connectedness among the scholars and allow them to participate in critical reflection with scholars from different disciplines and educational levels, in addition to health professions students from different geographical regions of California. The current curriculum is hosted on Moodle and will be revised to include the discussion boards under each module. Previously the scholars submitted their individual reflections through a Qualtrics link and could not see others' responses. With this discussion board format, students will be required to post an initial response and reflect on two other posts. The system will not mark their requirement as met until they complete all three posts. The AHEC Scholars program lasts a year, so they have until the end of the year to complete all nine modules. In addition to the Moodle being monitored by the AHEC Program Coordinator, each CA AHEC center has a director who can review the posts made by their scholars.

Evaluation Plan: The effectiveness of our intervention will be assessed through quantitative and qualitative measures. We will be quantifying usage of the modules and discussion boards within Moodle using its tracking feature, such as when the modules are accessed and how much is spent in each module. A qualitative thematic analysis will evaluate the differences between previous individual reflections and the discussion board posts to assess if the critical reflection and interactive requirements enhance comprehension of the material in each module.

Potential Impact: Discussion boards are a common educational method, but typically occur in the context of a single classroom and not in a statewide training program with a large, diverse cohort of health professions students. Creating a more interactive curriculum could lead to an increased interdisciplinary experience for health profession students.

References:

- 1) Aloni M, Harrington C. Research based practices for improving the effectiveness of asynchronous online discussion boards. *Sch Teach Learn Psychol.* 2018;4(4):271-289. doi:10.1037/stl0000121
- 2) Fehrman S, Watson SL. A Systematic Review of Asynchronous Online Discussions in Online Higher Education. *Am J Distance Educ.* 2021;35(3):200-213. doi:10.1080/08923647.2020.1858705

- 3) Testa D, Egan R. How useful are discussion boards and written critical reflections in helping social work students critically reflect on their field education placements?. *Qual Soc Work*. 2016;15(2):263-280.

Evaluating Eye Tracking Technology in Teaching Chest X-Ray Interpretation Skills to Medical Students

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Idea: Using eye tracking technology to enhance early-stage medical student proficiency in chest x-ray interpretation.

Need: In today's evolving medical education landscape where innovation is crucial, novel tools such as eye tracking have the potential to enrich learning experience. Eye tracking as an educational tool has been found to be a powerful avenue of providing useful feedback to those who use it as training supplementation (1). Radiology education has been shown to be a field that can benefit from its use. Prior to rotations, medical students have limited exposure to reading any radiographic images. However, often interactions during rotations and residency require you to be able to identify and understand pathology and pathophysiology for making correct diagnoses and proposing adequate treatment plans. E-learning has improved student confidence and skill in chest x-ray interpretation (2). Creative teaching strategies, such as e-learning and potentially eye-tracking, can be effective in boosting student comprehension and proficiency in radiology.

Methods: The objective of the study is to determine if there is a benefit to integrating eye tracking into pre-clinical radiology curriculum. A randomized, controlled trial will be employed to determine if eye tracking is efficacious as a teaching modality for learning how to read chest x-rays in medical school. The study will be conducted over a period of 4 weeks for 2 hours per week, totaling 8 hours of teaching at the California University of Science and Medicine. Participants would include a mix of first and second year medical students separated into a control group and experimental group. The experimental group will utilize eye tracking-based technology to assess their progress throughout the course, whereas the control group will utilize traditional teaching methods without the use of eye-tracking technology. The experimental group will utilize the "GP3 Professional Bundle | Eye tracking for research" to track the participants eyes and gaze patterns to provide real-time feedback during the chest x-ray course. Students in the experimental group will be shown live feedback of their behaviors, patterns of eye movements, and areas of excessive focus to help determine weaknesses in their approach to reading chest x-rays. The end result of this project is to show the power of eye tracking as a learning tool that can be utilized throughout pre-clerkship education, especially in the field of radiology.

Evaluation Plan: Testing and groups will be randomized to counteract any potential bias. Randomizing the participants will eliminate confounding variables that would possibly interfere with the validity of the study. Prior to starting the study, participants will be assessed for a baseline chest x-ray competency with a standardized exam covering basic pathology and physiology. At the end of course, groups will be assessed using a similar test, which will require them to select and describe areas of interest on a chest x-ray for pathology questions, and will be graded based on accuracy during data analysis. For normal physiology questions, students will be asked to describe what are the expected findings for a normal chest x-ray. The order of the questions will be randomized in order to minimize order effect bias. The scoring for the post-course exam will be analyzed against the initial exam to compare the improvements seen throughout the course between the two groups by using a paired T-test.

Potential Impact: Improving students' understanding of radiology during their rotations and residency will not only strengthen their foundation in interpreting images, but also enables them to create better treatment plans for their patients. Eye tracking can also be used in other aspects of medical education, such as reviewing histology or observing surgeries.

References:

- 1) Wentzell, S., et al. "E-learning for chest x-ray interpretation improves medical student skills and confidence levels." *BMC Medical Education* 18 (2018): 1-8.
- 2) Ashraf, Hajra, et al. "Eye-tracking technology in medical education: A systematic review." *Medical teacher* 40.1 (2018): 62-69.

Integrating Educational Gaming into the Learning Process During Neurology Clerkship

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Problem Statement: Gamification of learning has been shown to improve learner engagement and motivation but still has limited application in clinical education.

Rationale: Current medical students have more advanced technological experiences and curriculum expectations. There is a growing demand to improve pedagogical strategies to meet learners' needs for technologically sourced active learning (1). Educational games have gained popularity in recent years in preclinical and some clinical settings, but still have limited applications in clinical neurology education. Clinical neurology requires an understanding of complex concepts within a short period of time and teaching occurs in a fast-paced and high-pressure environment of patient care settings. Gamified training allows the utilization of technology-enhanced active learning, the use of simulated real-life scenarios, and interactive formats in a safe learning environment (2,3). It can be used as an additional pedagogical strategy to avoid pure memorization and facilitate building cognitive frameworks and interdisciplinary application of previously formed knowledge.

Methods: We introduced a matching game for neurological disorders of the spinal cord during neurology clerkship for 3rd year medical students. The game was played using a software application, developed at the John Sealy School of Medicine. This is a pilot project created to bridge different concepts of neuroanatomy (spinal cord tracts and their localization), clinical presentation of disorders of different etiology (infectious, autoimmune, metabolic, neoplastic, traumatic), and basics of neuroimaging. Preparatory work included study materials, instructions, and practice games. Students were asked to match five diagnoses with their clinical symptoms, neurological signs, localization, and radiographic presentation. Five simulated case scenarios were created for this activity based on deidentified information from real clinical patients. Neuroimaging included MRI scans, where pathologic findings were marked and described. By playing the game students determined the best response to match each clinical presentation, neuroanatomy, and neuroimaging with clinical diagnosis. The duration of the game was 60 min. The program provided immediate scoring and feedback upon completion. Students were asked to participate in the anonymous survey after the game with the purpose of improving the state of preparedness, modifications to the game, and searching for new applications.

Results: A total of 84 third-year medical students played the game, and 64 of them participated in the survey (76% response rate). Among those 64 students, 45 (70.3%) considered this format helpful for their learning, 7 students (11) were neutral in their assessment, whereas 12 (18.7%) reported it as not being helpful. 46 students (72%) reported that finding matching neuroimaging was the most challenging part of the game (either from imaging quality or insufficient knowledge of radiology tests). Other challenges were from clinical history (5/64), or software-related issues (5/64). One student reported the distractors as the most challenging part. Finding pieces of history and physical examination as the most helpful part of the activity was reported by 61% of students. All five simulated case scenarios were perceived as authentic real-life cases and the compare-and-contrast approach helped with learning. Interestingly, despite a high percentage of students considering imaging the most challenging part, many also reported it as most helpful in their learning, since it helped identify gaps in their knowledge and motivated them to further study. Among other topics that students would like to play matching games, 40% of students mentioned stroke, cognitive disorders, and seizures.

Potential Impact: Educational matching games can be effectively utilized for the diversification of teaching methods during clinical rotation. The game can be used as a learning tool, formative or summative assessment. It is applicable for individuals or groups, synchronous or asynchronous, and applicable at different teaching sites.

References:

- 1) McCoy, Lise, Lewis, Joy H. and Dalton, David. "Gamification and Multimedia for Medical Education: A Landscape Review" *Journal of Osteopathic Medicine*, vol. 116, no. 1, 2016, pp. 22-34.
<https://doi.org/10.7556/jaoa.2016.003>
- 2) Xu M, Luo Y, Zhang Y, Xia R, Qian H, Zou X. Game-based learning in medical education. *Front Public Health*. 2023 Mar 3;11:1113682. doi: 10.3389/fpubh.2023.1113682. PMID: 36935696; PMCID: PMC10020233.
- 3) Nieto-Escamez FA, Roldán-Tapia MD. Gamification as Online Teaching Strategy During COVID-19: A Mini-Review. *Front Psychol*. 2021 May 21;12:648552. doi: 10.3389/fpsyg.2021.648552. PMID: 34093334; PMCID: PMC8175641.

Pioneering the Use of EHR Data Analytics to Better Track Student Inpatient Clinical Experiences

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Idea: How to utilize Electronic Health Record to ensure that students receive comparable educational experiences across all sites as required by the LCME?

Need: LCME Standard 8.7 requires that medical schools ensure students receive comparable educational experiences at all training sites. There is little literature on utilizing the Electronic Health Record (EHR) to automatically track comparability across sites, because most students manually log their required clinical experiences. There was a need to assess equivalence across multiple Kaiser Permanente Medical Centers in Southern California for fifty second-year students on their one-week intensive Inpatient Immersion rotations in Medicine, Surgery, Obstetrics and Gynecology, Pediatrics, and Psychiatry. In response, Kaiser Permanente physicians collaborated with IT developers on an interdisciplinary innovation to utilize EHR analytics to assess similarities and differences within clerkships across multiple sites. We aimed to assess the feasibility of querying the EHR to examine inpatient encounter details such as specialty rotation, medical center location, diagnoses, patient demographics, number of written notes, and number of patients seen.

Methods: The initial step involved securing governance support and data-sharing agreements between two key stakeholders- Kaiser Permanente Bernard J. Tyson School of Medicine and the Kaiser Permanente healthcare system. This innovative project fostered collaboration among programmers, data analysts, and physicians for the development of a novel product. The Information Technology Team (IT) assisted in the EHR data retrieval using Clarity in Epic, integrating various databases through SQL programming (Microsoft's Structured Query Language), and in the production of dashboards employing business intelligence software (Tableau). Utilizing business intelligence software, we successfully identified students' participation in patient care at the encounter level based on note authorship. Our analytics measured various outcomes by filtering for medical school year, specialty, preceptor, student, and six medical centers. Tableau created and deployed the final dashboards displaying the comparability of students' clinical experiences across multiple hospitals. In this academic year 2023-2024, it's feasible to review patient encounters during the students' one-week intensive inpatient immersion rotations across multiple sites and specialties.

Evaluation Plan: Clerkship Directors will be accountable for tracking patient encounters of medical students during the one-week inpatient immersion rotations. Data can be displayed in an easy-to-visualized dashboard accessible to senior curriculum leaders and course leaders. In real-time, course leaders will monitor for aberrations in clinical experiences at the six designated teaching hospitals or drill down to the individual second-year student level. The system can quickly detect disparities such as required clinical experiences (RCEs), patient demographics, or the number of notes written by students. Based on dynamic EHR monitoring, midcourse adjustments can be implemented, i.e., a student not seeing sufficient number of diabetes cases. Our next steps will be developing an analytics application to assess the comparability of student experiences in real-time on the four-week subinternships. Throughout this academic year, we will survey course leaders on the value of utilizing electronic health record data to develop and manage equivalent inpatient clinical experiences. To ensure continuous improvement, we plan to conduct a PDSA evaluation process by holding debriefing sessions with IT, curriculum designers, and course directors

Potential Impact: Our findings showcase an innovative approach in which the EHR can compile and provide useful information to evaluate comparable clinical experiences among students; thus replacing the conventional manual data collection. This EHR programming could serve as a model for other medical schools.

References:

1) LCME. "Functions and Structure of a Medical School. Standards for Accreditation of Medical Education Programs Leading to the MD Degree." March 2022.

<https://lcme.org/publications/#Standards>

An Anatomically Modeled, 3d-Printed Tracheobronchial Tree Simulator Eliciting Bronchial Bleeding.

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Idea: Market-available, mannequin-based airway models may misrepresent tracheobronchial anatomy and limit their practical use to pre-designed- scenarios.

Need: Flexible bronchoscopy (FB) is vital in cardiothoracic anesthesia, with 37% of double-lumen tubes (DLT) needing endoscopic repositioning post-intubation. Bronchial blocker (BB) deployment for lung isolation is also crucial in some cases. Effective FB use demands understanding visuospatial landmarks and creating mental 3D images of anatomic structures. This understanding is challenging without hands-on experience, especially when only viewing the tracheobronchial tree endoluminally. Medical simulation offers a practice alternative, with physical models potentially outperforming computer ones. However, many commercial airway trainers lack realism, hindering accurate 3D mental imaging. A hybrid opaque-transparent simulated tracheobronchial tree, offering realistic pathology simulations like airway bleeding, might be superior. We detail our method for creating a 3D-printed tracheobronchial model and its initial use in simulating lung isolation and airway issues.

Methods: We imported the dataset from an anonymized high-resolution CT scan of a human into Mimics Innovation Suite (Materialise NV, Leuven, Belgium) software for segmentation. We isolated the radiographically imaged airway below the larynx and up to 3rd generation bronchi. We used the software's wrapping function and inside-hollow tool to generate a computer model of the airway wall. The object was smoothed and optimized for 3D printing using 3-Matic software (Materialise NV, Leuven, Belgium). The file was then physically printed using the J850™ Digital Anatomy™ 3D Printer (Stratasys, Rehovot, Israel) using both a mixture of VeroClear™ and Agilus30™ for a transparent print and Vero® (Color code HEX #ED696B) for a matching opaque model. We constructed a wood base and box to house the simulator; i.e., to fix the tracheobronchial tree and either cover it to occlude the operator's view from the outside or to reveal the model, as appropriate for didactic reasons. In a second iteration of the model, we attached adaptors to the bronchial ends and an IV system to simulate regional bleeding which could be varied.

Evaluation Plan: Our evaluation plan for this new simulation setup includes: 1) Accountability: We will track the trainee's amount of training sessions with the available airway simulators and the number of bronchoscopies with/without a diagnosis of airway bleeding.

2) Learner reaction: We will employ a post-lab survey to assess the learner's perceptions of using this new training model against mannequin-based ones in terms of anatomical accuracy, visual aspect, satisfaction, and self-confidence

3) Learning: During simulation sessions, we will measure the time to perform a full bronchoscopy examination, identification of the bleeding source, and time to BB deployment. Periodic simulation sessions every 3 months will assess the retention of the skills.

4) Behavior: After a trainee performs a patient bronchoscopy with/without airway bleeding, we will conduct a survey regarding the sense of preparedness, the impact of simulation, and the confidence level. The time since the last simulation session with the tracheobronchial tree 3D print will also be noted.

Potential Impact: The increasing availability and decreasing costs of 3D printing have permitted the creation of patient-specific models, which represent with higher accuracy the complexities of human

airway anatomies. Using the method described, we can design patient-specific simulators for complex case preparation and trainee education.

References:

- 1) de Bellis M, Accardo R, Di Maio M, et al. Is flexible bronchoscopy necessary to confirm the position of double-lumen tubes before thoracic surgery? *European Journal of Cardio-Thoracic Surgery*. 2011;40(4):912-918. doi:10.1016/j.ejcts.2011.01.070
- 2) Neustein SM. The Use of Bronchial Blockers for Providing One-Lung Ventilation. *Journal of Cardiothoracic and Vascular Anesthesia*. 2009/12/01/ 2009;23(6):860-868. doi:https://doi.org/10.1053/j.jvca.2009.05.014

Charting the Path: A New Roadmap for Guiding Junior Radiology Residents in Early Call Preparation

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Idea: Building a unique curriculum development and tracking platform, Raducation, to simulate cases and prepare junior radiology residents for call.

Need: The educational value of the on-call experience of radiology residency is fundamental to the development of independent learning and efficiency. It is generally valued by residents as a necessary experience for interpreting high volume studies across multiple modalities without immediate attending oversight (1). Many programs are structured such that independent resident call begins in the second year. Programs may lack standardized curriculum to prepare residents for call responsibilities, leading to variations in the readiness (2). To address this issue, we developed a tiered-based learning platform, Raducation, that combines aspects of flipped classroom curriculum (online lectures, relevant papers) with a dedicated pre-call readiness module that incorporates simulation cases. The objective is to establish a roadmap for junior residents to follow during their rotations, thereby ensuring a similar level of knowledge and competence in the pre-call training.

Methods: The online Raducation platform targets first and second year radiology residents. It focuses on educational materials for body radiology as imaging of the abdomen and pelvis are frequently ordered during on-call hours (3). On the Raducation platform, there are different sections subdivided by modality (e.g., CT/MRI versus ultrasound). Each section has a roadmap for the rotation with defined objectives and expectations, supplemental videos, weekly landmark papers, and simulation cases via a web-based Picture Archiving and Communication System (PACS) that mimics the real-call experience. The practice cases are separated into a 2-tier system depending on resident year and level of exposure. Additionally, there is a specific on-call readiness module with pre-module and post-module surveys, tips for body imaging on call, must-know readings, and practice cases.

Evaluation Plan: The platform will be evaluated based on the pre- and post-survey data from the pre-call readiness module evaluated on a 5-point Likert scale to assess for: 1) diagnostic confidence of identifying acute abdominal pathology on different modalities (radiographs, CT, US, and MRI), 2) effectiveness of different components of the platform (online cases, lectures, tips, required readings), and 3) overall satisfaction with the course.

Potential Impact: A platform such as Raducation can improve resident education by not only bridging potential gaps in knowledge but also simulating real-life cases to assess resident preparedness for call and providing greater standardization of pre-call curriculum and expectations. This model can potentially be applied to other specialties.

References:

- 1) Dell CM, Deloney LA, Jambhekar K, Brandon H. Preserving the educational value of call in a diagnostic radiology residency program. *J Am Coll Radiol.* 2014;11(1):68-73. doi:10.1016/j.jacr.2013.08.027
- 2) Sajedi P, Salamon N, Hostetter J, Karnezis S, Vijayasarithi A. Reshaping Radiology Precall Preparation: Integrating a Cloud-Based PACS Viewer Into a Flipped Classroom Model. *Curr Probl Diagn Radiol.* 2019;48(5):441-447. doi:10.1067/j.cpradiol.2018.07.014
- 3) Stoker J, van Randen A, Laméris W, Boermeester MA (2009) Imaging patients with acute abdominal pain. *Radiology* 253:31-46

Module for Medical Students: Conducting Psychosocial Health Screening of College Students

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Idea: Medical students will be able to conduct psychosocial health screening of college students after completing a new interactive student health module.

Need: According to the ACHA-NCHA survey the prevalence of Mental Health issues showed that 60% of college students felt overwhelming anxiety and nearly 40% experienced depression severe enough to impact academic performance (1) Given these statistics there is a clear national need for more comprehensive and proactive mental health support on college campuses. Timely identification and intervention is crucial for preventing mental health concerns such as depression. Training medical students in preventive mental health screening via interactive learning methods can enhance engagement and enable them to develop the competence needed to identify mental health concerns effectively. Such interactive techniques align with past studies that have shown that simulation-based training can significantly improve learner outcomes and retention of knowledge in healthcare education (2). Recognition and early detection, combined with knowledge regarding available mental health resources, can help ensure appropriate preventive health guidance (3). To address this issue, we propose a 4-hour interactive module for 4th year medical students to be able to conduct psychosocial screening and provide preventive guidance for college students.

Methods: The intervention will be implemented for 18 fourth year medical students enrolled in a four-week rotation in student health during 2024 (1-2 students per month). The module will include four, 2-hour interactive sessions held at the student health center. Each week will focus on one skill set: 1) Using the revised HEEADSSS assessment (home, education, eating/body image, activities, drugs, sex, suicide/depression, safety) to gather psychosocial and mental health data from college students; 2) What to do with the information gained (mental health challenges); 3) What to do with the information gained (lifestyle and safety issues); 4) Applying these concepts to my own wellbeing. Each session will use a variety of techniques that encourage engagement and provide opportunities for deliberate practice of new skills (screening, referral, developing plans with a patient, applying concepts to own wellbeing). Methods include brief didactics (15 min), use of patient cases; use of worksheets and protocols for developing wellbeing and prevention plans, role play, and engagement with standardized patients. The faculty leader will provide immediate feedback to learners as they practice each skill set. The in-class activities will be supplemented with a log of relevant cases (experience, challenges, insights) and an individual coaching session near the end of the rotation for two-way feedback on the module and rotation. To assess knowledge an online pre- and post-test will be used.

Evaluation Plan: Our planned evaluation includes four elements: 1. Tracking of all planned activities to note if and how each was changed as implemented. We will also track our 18 learners - attendance, activities and assignments completed. 2. Learner Reaction: We will gather feedback through session evaluation forms (and an end of rotation feedback form), to gather information from learners on timing, enjoyment, and engagement. We will use data from the log, notes from the individual meeting notes to learn more about opportunities to utilize the new skills and how easy each skill was to transfer from classroom to clinic. 3. Learning: a) Knowledge - an online pre-post test will be used; b) Skills - Each week will have one standardized patient case with a rating form, the result will provide data on level of skill reached by the 18 learners. 4. Behavior: a) the learner logs will be used to show the number of opportunities to practice each skill, with challenges and insights, and b) In the final session learners will make a plan for their own wellbeing (not indicate actual changes but provide insight into areas selected for personal change). Finally, the end of rotation feedback form and two-way feedback session can provide insights into all areas

Potential Impact: Student health centers may be an underutilized training site for medical students to gain skills in the screening of adolescents and young adults. If this project demonstrates success, it could provide a model for other medical schools and other health professions' training programs.

References:

- 1) American College Health Association. National College Health Assessment II: Undergraduate Student Reference Group Data Report spring 2018.
- 2) Ivette Motola, Luke A. Devine, Hyun Soo Chung, John E. Sullivan & S. Barry Issenberg (2013) Simulation in healthcare education: A best evidence practical guide. AMEE Guide No. 82, Medical Teacher, 35:10, e1511
- 3) James Robertson & Karim Bandali (2008) Bridging the gap: Enhancing interprofessional education using simulation, Journal of Interprofessional Care, 22:5, 499-508

Friend Or Foe: Standardized Protocol Stymies Critical Thinking in Diabetic Ketoacidosis Management

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Idea: Quantitative research using a case-based multiple-choice survey to assess protocol reliance by pediatric residents to manage diabetes ketoacidosis.

Need: Institutional standardized clinical protocols are the product of evidence-based medicine and expert opinions. These protocols aim to streamline workflow, improve clinical outcomes, and optimize cost-effectiveness in health care settings, including teaching hospitals. Physicians-in-training may equate their proficiency with these standardized protocols to attainment of medical knowledge. In our hospital, patients with diabetic ketoacidosis (DKA) are managed by pediatric residents in conjunction with an internal standardized protocol known as the “DKA map”. When pediatric residents rely heavily on the DKA map, they may fail to recognize more appropriate solutions that are not part of the standardized protocol. We propose a case-based questionnaire to explore the frequency of residents’ default to the DKA map for management decisions when critical reasoning may lead to alternative solutions that are not part of the DKA map but are more beneficial and cause less harm to the patients.

Methods: We will develop a computerized questionnaire that examines the degree of protocol reliance in DKA management. The questionnaire will consist of 12 clinical case-based multiple-choice questions. These questions will first be validated by a committee of pediatric diabetologists to confirm questions can address critical thinking skills. Each question pertains to a particular step in the DKA map that was formulated based on evidence-based medicine or expert opinion. Topics to be examined include fluid management, insulin dosing, laboratory assessments, transitions in medications, and emergency situations. Each clinical question will consist of three answers, with one of them being “to follow the DKA map”, which may or may not be the correct answer. Of the other two answers, one will always be incorrect whereas the other answer may be the correct answer that is superior to that of the DKA map, or the incorrect answer if “to follow the DKA map” is correct. Those eligible for the study are pediatric residents who have utilized the DKA map in the program, either as seniors or interns rotating through the 4 weeks endocrine inpatient rotation. The survey will be anonymous and approved by IRB. There will be a follow-up qualitative survey on their familiarity with the DKA map, DKA pathophysiology, and a qualitative description of resources that have supplemented their understanding of inpatient DKA management.

Evaluation Plan: Anonymous results will be collected and categorized into three groups – (1) choosing “DKA map” correctly, (2) choosing “DKA map” incorrectly over a more appropriate solution, and (3) choosing an incorrect solution. Our plan is that 4 questions will have “DKA map” as the correct answer. We will analyze the data with a statistical program to assess the degree of protocol reliance based on the frequency of choosing “DKA map” incorrectly. We will evaluate any association of the result to their familiarity with the protocol and their understanding of DKA pathophysiology. Data from the qualitative survey will help identify additional education resources that should accompany the dissemination of these standardized protocols. Feedback will be provided to protocol design committees to ensure education objectives are incorporated into future construction of protocols to augment pediatric residents’ experiential learning.

Potential Impact: Our results may reveal an over-reliance by pediatric residents on standardized clinical protocol as default learning tool, which optimizes clinical work-flow at the expense of critical thinking. Additional education tools may augment the use of standardized clinical protocol so that residents can appreciate the nuances in clinical management.

References:

- 1) Volkova NB, Fletcher CC, Tevendale RW, Munyaradzi SM, Elliot S, Peterson MW. Impact of a multidisciplinary approach to guideline implementation in diabetic ketoacidosis. *Am J Med Qual.* 2008 Jan-Feb;23(1):47-55.
- 2) Corriere MD, Minang LB, Sisson SD, Brancati FL, Kalyani RR. The use of clinical guidelines highlights ongoing educational gaps in physicians' knowledge and decision making related to diabetes. *BMC Med Educ.* 2014 Sep 8;14:186.
- 3) Terry PD, Knight M, Bollig R, Heidel RE, Miller P, Quinn MA, Daley B, Goldman M. Overreliance on Standardized Protocols: A Pilot Study of Surgical Residents and Fellows. *Am Surg.* 2017 May 1;83(5):e159-161

Guideline Development for Providers to Optimize Interpreter and Family Experience in Pediatrics

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Idea: Analyze experiences of Spanish interpreters who perform simultaneous interpretation on family-centered rounds and develop evidence-based guidelines.

Need: In March of 2018, we started a program at UCLA Mattel Children's Hospital, Ronald Reagan Medical Center, where in-person Spanish interpreters provided equipment-assisted simultaneous medical interpretation (EASMI) on family centered rounds (FCR). In a previous study, we surveyed the medical team and families to determine family and provider satisfaction with EASMI. Additionally, several themes emerged about the interpreters during our family interviews with interpreters providing increased comfort; feelings of safety; and personal connection for families. As a mode of interpretation, EASMI was rated as highly satisfactory. This type of interpretation can assist in delivering more equitable FCR communication, improve patient satisfaction and reduce logistical burdens associated with consecutive interpretation modalities. Although research indicates that inpatient pediatric medical interpreters experience position-based distress, no studies have explored the perspectives of in-person simultaneous interpreters. This study explored the perspectives and experiences of interpreters utilizing EASMI on FCR.

Methods: In-person Spanish interpreters certified to perform EASMI at UCLA Mattel Children's Hospital and Harbor-UCLA Medical Center were recruited by email to participate in this study. We conducted in-depth, one-hour interviews with each study participant between September-December 2020. The interviews asked questions about the interpreters' roles and responsibilities, including queries about experiences with high acuity, medically complex patients. Interview questions also probed the emotional aspects of working as an interpreter, such as building rapport and partnerships with the medical team, the impact of interpreter services on the care of hospitalized children, and the possibilities for professional tensions when interpreters must define boundaries for serving as partners in the delivery of care and as advocates for patient clinical care. Participants also completed an online demographic survey and a separate survey that assessed vicarious trauma and burnout based on previously validated survey instruments. Transcripts of interviews were analyzed using reflexive thematic analysis. The study was deemed IRB-exempt.

Evaluation Plan: Study participants were between 25-64 years old and had been certified interpreters for 4-12 years. They had been performing simultaneous interpretation from 1.5-4 years and EASMI on pediatric FCR for 1-3 years. There were five main themes from the interviews: 1) Healthcare system barriers impeding effective interpretation (rushing interpretation, lack of education and awareness from staff about EASMI); 2) System-level interpretation facilitators (provider buy-in, interpreters seen as part of the team); 3) Defining interpreter roles and functions in patient care (ethical consciousness of role, relationship-building strategies with families, cultural brokerage, and patient-provider communication navigator); 4) Addressing challenging aspects of the interpreter role (high pressure/stakes environment, the weight of interpreter responsibility, and the impact of patient death); and 5) Acknowledging rewarding aspects of the interpreter role (passion for linguistics, commitment to service and connection to diverse ethnic communities).

Potential Impact: Interpreters serve as language and cultural brokers. They allow patients with a primary language other than English (PLOE) to receive high quality, equitable health care. Interpreters shared strategies for improving interpretation during FCR and optimizing interpreters' experiences and perceived support from the healthcare team.

References:

- 1) Kosack A, Carson SL, Montenegro EYB, Owen M, Dodge S, Sim M, Cagigas X, Ahumada-Mocorro L, Kamzan A, Acuna Hernandez E, Lopez G, Guzman E, Sanchez Gomez D, Islas Z, Walker VP, Lerner C, Lloyd J. Improving Patient Experience Scores Using Simultaneous Interpretation on Family-Centered Rounds. *Hosp Pediatr.* 2022 Dec 1;12(12):1019-1035.
- 2) Lim, Paulina S., et al. "'We need a little help': a qualitative study on distress and coping among pediatric medical interpreters." *Journal of Hospital Management and Health Policy* 6 (2022).
- 3) Suarez, Nataly R. Espinoza, et al. "The roles of medical interpreters in intensive care unit communication: a qualitative study." *Patient education and counseling* 104.5 (2021): 1100-1108.

Partnering with AlohaCare to Deliver a Health Systems Science (HSS) Curriculum for Medical Students

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Problem Statement: Health plans are gatekeepers of health care provision, but the role of health plans is not readily included in most Health Systems Science curricula.

Rationale: In the US, health plans are the gatekeepers for health care funding and provision. However, there are limited undergraduate medical education (UME) curricula which demonstrate how health plans impact physicians' ability to provide patient care.¹⁻³ Many medical school graduates enter residency without an understanding of how health care is structured, funded, and delivered in the US. ¹⁻³ The University of Hawai'i, John A. Burns School of Medicine (JABSOM) partnered with the not-for-profit AlohaCare health plan to pilot an immersive, HSS curriculum for rising second year medical students. This curriculum provided a platform for students to participate in authentic HSS learning experiences from the health plan perspective. AlohaCare health professionals actively engaged students in their daily operations to critically analyze systems thinking, health care funding, and the synergies between the health plans and physicians' abilities to provide equitable and inclusive health care.

Methods: Two 4-week, 16-hour electives were conducted during July and August 2022. Each elective enrolled two rising second year medical students for a total of 4. Learning activities involved in-person sessions conducted at the AlohaCare offices and activities at community health centers. Students also completed virtual, asynchronous HSS modules. Coursework was co-developed with JABSOM faculty and taught by AlohaCare leadership and staff, all of whom volunteered their time and efforts. Students learned about the core domains of HSS through the lens of managed care by participating in authentic health plan experiences. These experiences included interdisciplinary coordination of care for high-risk patients, community outreach, policy development, inpatient behavioral rounds and utilization management.

The short-term goal for this project was to provide students with a health plan perspective to help optimize care for patients. The long-term goal is to provide students with health plan knowledge and experience so they can better promote health equity across their training and into practice. Students completed pre and post electronic surveys assessing their HSS knowledge, confidence, and skill sets. An evaluation specialist conducted debriefing sessions with each student cohort and with AlohaCare leadership upon the conclusion of each elective block. Data from the official JABSOM elective evaluation were collected and triangulated with the other data points.

Results: 100% of the medical students (n=4) participated in anonymous, pre-post, electronic surveys administered on the first and last days of the elective. 100% of the students also participated in a final debriefing session on the last day of the elective. The Chief Medical Officer and Senior Medical Director for AlohaCare participated in debriefing sessions at the end of each elective block.

Although limited by the small sample size, 100% of the student survey results as well as the qualitative debriefing data demonstrated increased levels of confidence working with health plans. Student debriefing data also indicated an increased understanding of how health plans directly affect physicians' provision of patient care. Data from AlohaCare leadership debriefing sessions revealed a firm commitment to integrating health plan information and experiences early in medical school training and recommended expanding the elective beyond 16 hours. Data from JABSOM course evaluations indicated strong student satisfaction with the elective.

Student Debrief Data:

"I was able to see health plans through a different lens. I think about it as a payor, but it is more like a clinical interdisciplinary team."

"This changed my perspective, the way I think when I enter the physician workforce. I have a different mindset and will approach patient care in a different way."

"I was surprised to learn how involved health care is at the insurance level. It is not the same as hospital case management."

Potential Impact: A health-plan driven curriculum can allow students to experience health care delivery through the lens of a health plan's mission and goals. Opportunities to critically think about the role and complexities of Health Systems Science within a health plan can enable students to develop strategies early in their training to promote health equity.

References:

- 1) Gonzalo JD, Lucey C, Wolpaw T, Chang A. Value-Added clinical systems learning roles for medical students that transform education and health: A guide for building partnerships between medical schools and health systems. *Acad. Med.* 2017;92(5):602–607. <https://doi.org/10.1097/ACM.0000000000001346>
- 2) Gonzalo JD, Wolpaw D, Graaf D, Thompson BM. Educating patient-centered, systems-aware physicians: a qualitative analysis of medical student perceptions of value-added clinical systems learning roles. *BMC Medical Education*, 2018;18(1):248–248. <https://doi.org/10.1186/s12909-018-1345-5>
- 3) Gonzalo JD, Ogrinc G. Health Systems Science: The “broccoli” of undergraduate medical education, *Acad. Med.* 2019;94(10):425-1432. <https://doi.org/10.1097/ACM.0000000000002815>

Physical Medicine & Rehabilitation Anatomy-Musculoskeletal Ultrasound Residency Curriculum

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Idea: Implement a novel, interactive Anatomy-Musculoskeletal Ultrasound curriculum for Penn State Physical Medicine & Rehabilitation (PM&R) Residents.

Need: Musculoskeletal ultrasound (MSK-US) is a prominent aspect of a PM&R practice with over 50% of PM&R physicians utilizing MSK-US as a tool to enhance their diagnostic and therapeutic treatments. A vast majority of physiatrists who do not utilize MSK-US note that this is primarily due to a lack of training (1). As of 2014, only 45% of PM&R residency programs provided MSK-US exposure, and of those that required exposure, only 44% had a formal curriculum (2). A 2015 survey of PM&R Program Directors indicated that only 20% of respondents required MSK-US competency to be demonstrated for graduation (3). That same year, the American Academy of Physical Medicine and Rehabilitation and the Accreditation Council for Graduate Medical Education (ACGME) Residency Review Committee required exposure of a minimum to 15 MSK-US procedures throughout residency training. Currently, there is no formalized PM&R residency curriculum to address this requirement. This innovative curriculum will fulfill this requirement for Penn State's residents by providing all residents (N=12) with access to 36 interactive MSK-US sessions over the course of their 3-year training.

Methods: This innovative MSK-US curriculum is designed for PM&R 2nd, 3rd, and 4th year residents. The curriculum will be held 12 times per year and actively engage all residents in different teaching/learning roles and modalities depending on their year of training. Individual sessions will occur monthly beginning in August and continue throughout the calendar year for a total of 12 sessions. Each session will last for 4 hours. Learners will be divided into 4 small groups of 3 residents representing each residency level to ensure both experiential and cognitive diversity. Groups will use a near-peer teaching approach. Physician faculty will rotate among groups providing guidance and feedback. Each session will be hands-on and include content on anatomy, physical exam, pathology, and relevant ultrasound scanning. At the start of each session a case will be reviewed by the entire group. The review will include physical exam findings and anatomy of the specified area. The remainder of the time will involve hands-on ultrasound practice with a standardized patient, targeting the pertinent anatomy discussed in the case. Groups will focus on scanning the appropriate area, identifying the anatomical structure, and demonstrating appropriate picture quality for their cohorts. Additionally, residents will problem-solve in real time as they learn how to address any issues that may arise. Each group will then present its case to the larger group.

Evaluation Plan: Residents will complete an anonymized, electronic, Likert, pre-post survey at the beginning and end of the 12-week sessions. Surveys will evaluate residents' MSK-US confidence and skills. Due to the small numbers, results will be aggregated and analyzed for trends. All residents will participate in an informal 15-min. debriefing at the end of each learning session. They will engage in a formal 1 hr. debrief at the end of the 12-week session. This will be conducted by an assessment specialist who will analyze the qualitative data and produce a de-identified report for the supervising faculty. All data will then be triangulated to ascertain curricular effectiveness. In addition, the final session of the course will include a formative, videotaped OSCE exam using standardized patients. Residents will be formatively evaluated by the standardized patients using a checklist. Residents will review their individual videos and assess their own performance using a checklist. The supervising faculty will also review each video using the same checklist to assess each resident's performance. Residents will meet with the supervising faculty (virtually/ face-to-face) to discuss their performance assessments and address any learning issues.

Potential Impact: This curriculum satisfies the ACGME ultrasound requirement, enhances residents' confidence using ultrasound, and provides practical ultrasound skills that can be applied throughout

one's career. A near-peer teaching approach provides an ongoing forum for residents to learn from and support one another as they develop mastery across their training.

References:

- 1) Yablon, Corrie M., et al. "A Needs Assessment of Musculoskeletal Fellowship Training: A Survey of Practicing Musculoskeletal Radiologists." *American Journal of Roentgenology*, vol. 200, no. 4, 2013, pp. 732–40. Crossref, doi:10.2214/ajr.12.9105.
- 2) Siddiqui, Imran J., et al. "The Current State of Musculoskeletal Ultrasound Education in Physical Medicine and Rehabilitation Residency Programs." *PM&R*, vol. 8, no. 7, 2016, pp. 660–66. Crossref, doi:10.1016/j.pmrj.2015.11.010.
- 3) Bockbrader, MD, PhD, Marcia, et al. "Toward a Consensus for Musculoskeletal Ultrasonography Education in Physical Medicine and Rehabilitation: A National Poll of Residency Directors." *PubMed Central (PMC), American Journal of Physical Medicine and Rehabilitation*, 1 Aug. 2019, www.ncbi.nlm.nih.gov/pmc/articles/PMC6635046.

Australian Health Sciences Students' Perceptions of Online Vs. Blended Delivery in the Post-Covid-19

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Problem Statement: To seek to understand medical and health sciences students' perceptions of the benefits and bottlenecks of online versus blended delivery.

Rationale: During the COVID-19 pandemic, universities worldwide have quickly shifted the majority courses to online delivery to minimize the impact of the lockdown (Tang et al. 2021). However, the overall satisfaction of online delivery was not high (Elshami et al., 2021). Some students were concerned about the quality of their learning and clinical training through the online delivery, whereas others were satisfied with the online learning and preferred to continue with the online delivery due to its flexibility and other benefits (Brown et al., 2021). In the post-COVID-19 era, re-designing medical and health sciences programs require a thorough understanding of students' perceptions of the online versus blended delivery in order to integrate their opinions into transformative of course delivery. The present study investigated Australia medical and health sciences students' perceptions of the benefits and bottlenecks of the two modes of delivery.

Methods: The study was conducted in a research-intensive metropolitan university in Australia. A total of 199 medical and health sciences students at both undergraduate and postgraduate levels participated in the study. Informed consent was obtained from all the participants for the study. Students were informed that participant in the study was completely voluntary and anonymous; and their decision on participation or not would not have any consequences of their studies. They could withdraw from the study at any time. Among them, 171 students were enrolled in a Bachelor degree (85.9%), 8 were enrolled in a Graduate Certificate degree (4.0%), and 20 were enrolled in a Master degree (10.0%). The instrument was an anonymous online open-ended questionnaire, which asked students' perceptions of the benefits and bottlenecks of both online and blended deliveries.

Thematic analyses were used to code the open-ended responses. The coding began with reading all the responses thoroughly and repeatedly by highlighting the key statements in each response. By focusing on the highlighted parts in the second round of reading, codes were developed. Following an open coding procedure, a list of possible themes was identified. Constant and iterative analytical comparisons were applied by comparing and contrasting representative quotes in each theme to determine the final set of themes and the definitional properties for each theme.

Results: The benefits of online delivery: 1. Online delivery is flexible, as it enables students to learn in their own time; cater for their different life commitments; and save their time to commute to universities. 2. Online delivery makes learning effective, as when students learn in a personal space, their productivity will be high. 3. online delivery can improve inclusive education for students with disabilities.

The bottlenecks of online delivery: 1. problems with lecture recordings: a) recordings were out of date, b) contents were unengaging, and 3) visual and audio quality of the recordings was poor. 2. problems with online course design: a) a lack of interaction in online courses, b) limited types of online learning activities, and c) poor design of online course sites. 3. technical issues: a) technical equipment was not user-friendly; and b) a lack of technical support for students.

The benefits of blended delivery: 1. Blended delivery makes learning engaging, as it creates a sense of community for students. 2. Blended delivery is easier to handle than fully online courses. 3. Blended delivery allows students to learn at different places.

The bottlenecks of blended delivery: two were related to the face-to-face component: 1. limited timetabling options for the face-to-face learning; 2. large size of face-to-face lectures. Three were related to the online component, which were the same as those found for fully online delivery.

Potential Impact: Improving students' satisfaction with online learning can be achieved by: 1) providing students with quality services to solve their technical issues, which are likely to affect students' acceptance of online learning; 2) adding elements of interaction in course design (e.g., embedding collaborative learning tasks and providing timely feedback).

References:

- 1) Brown A, Kassam A, Paget M, Blades K, Mercia M, Kachra R. Exploring the global impact of the COVID-19 pandemic on medical education: An international cross-sectional study of medical learners. *Canadian Medical Education Journal/Revue Canadienne de L'éducation Médicale*. 2021;12(3):28-43.
- 2) Elshami W, Taha M H, Abuzaid M, Saravanan C, Al Kawas S, Abdalla M E. Satisfaction with online learning in the new normal: perspective of students and faculty at medical and health sciences colleges. *Medical Education Online*. 2021; DOI:10.1080/10872981.2021.192009012
- 3) Tang Y M, Chen P C, Law K M, Wu C H, Lau Y Y, Guan J, He D, Ho G T. Comparative analysis of student's live online learning readiness during the coronavirus (COVID-19) pandemic in the higher education sector. *Computers & Education*. 2021; DOI:10.1016/j.compedu.2021.104211

MedMicroMaps: a Novel Interactive Digital Media Tool for Infectious Disease to Enhance E-Learning In

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Problem Statement: Resources for teaching infectious diseases are geared for rote memorization and lack the ability to analyze diagnostic logic.

Rationale: Medical education has undergone major changes in the past 20 years to adapt to the digital-centered student population by modifying content for less didactic lecture and more time for self-study with e-Learning 1-3. Many medical universities have evolved with novel strategies with the curriculum to incorporate e-Learning material post-pandemic. Studies across diverse disciplines have established the benefits of e-Learning modules 1-3; however, the field of microbiology is lacking e-resources tailored for post-graduate studies. A comprehensive interactive mindmap of infectious disease causative agents was developed using principles of Method of Loci and spatial recall to provide a guide with options to approach differentials from clinical, epidemiological and biological organization algorithms.

Methods: Aim: To evaluate user engagement of microbiology digital media resources (MedMicroMaps, pathogenesis animation, Case-Based Guides). Methods (Pilot Study): Students in Term 4 Spring 2022 (n=865) at St George's University- Grenada in hybrid delivery format were provided link to Microbiology Digital Media Resources website hosted on SGU Digication webserver, via QR code announcement during first live lecture of infectious disease system module. A link to Feedback Survey in Qualtrics with IRB-approval was provided to students enrolled in Term 5 via Course email announcement on SGU Sakai server.

Methods (On Going): MedMicroMaps will be incorporated in the curriculum design of Microbiology, Immunology and Infectious Disease course at Montana College of Osteopathic Medicine. An introductory map slides for pre-recorded PPT session organized with biological classification with post-session recall questions provided in Panopto videos and question performance will be compared to PPT sessions without MedMicroMaps slides. The integration of MedMicroMaps will also include case-based discussions during engaged learning systems. Assessment of impact of e-learning material will be assessed via user data and polling on LMS, Panopto, and iClicker. A Qualtrics feedback survey with informed consent will be administered at the completion of the course.

Results: Results (Pilot Study): Engagement on the SGU Digication website indicated 1000+ views per module per month for Terms 4 and Terms 5 (current total views 14K at time of writing), with increased viewing the weekend prior to the module. After the final infectious disease module, 79 students (9.1% response rate) completed the Qualtrics survey. Majority of the responses indicated Extremely Satisfied (65%, n=52) or Somewhat Satisfied (21.25%, n=17) to "Rate your overall satisfaction with the Microbiology digital study resources". When prompted for specific utilization of the MedMicroMap, students ranked Exam Preparation highest (71.4%, n=50), followed by used with Practice Questions (57.4%, n=43).

Potential Impact: The MedMicroMaps system is designed with cross-platfrom digital media interfaces, including VR-AR-XR, mobile app, and e-book with tailored study guides and clinical cases. MedMicroMaps can be adapted for utilization for diverse audiences.

References:

- 1) Chaoyan Dong & Poh Sun Goh (2015) Twelve tips for the effective use of videos in medical education, *Medical Teacher*, 37:2, 140-145, DOI: 10.3109/0142159X.2014.943709
- 2) Gerry J Gormley, Kate Collins, Mairead Boohan, Ian C Bickle & Michael Stevenson (2009) Is there a place for e-learning in clinical skills? A survey of undergraduate medical students' experiences and attitudes, *Medical Teacher*, 31:1, e6-e12, DOI: 10.1080/01421590802334317

3) Herrington, J., Reeves, T.C., & Oliver, R. (2009). A Guide to Authentic e-Learning. Publisher: Taylor
Francis Group. DOI:10.4324/9780203864265

Exploring the Impact of Personality Typology Systems on Lifelong Learning Skills

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Idea: Fostering Self-Awareness and Lifelong Learning Skills in Pediatric Residents: Exploring the Impact of Personality Typology Systems

Need: According to the ACGME, residency must serve as the foundation for career-long professional development. Upon transitioning from undergraduate medical education (UME) to graduate medical education (GME), resident learners are expected to adapt to a self-regulated learning environment and gain adaptive expertise learner skills. Branzetti et al (2022) identified that agency, metacognitive goal setting, and motivation are central to building adaptive expertise learner skills. In addition to tailoring systems and supportive programs, fostering self-awareness is essential. We currently employ personality typology systems (Enneagram and PRISM) to encourage routine self-reflection and to develop insight into their strengths and barriers. Through these tools, residents may gain deeper insights into their personalities, motivations, and goal setting behavioral patterns. By practicing upon these insights, we aim to cultivate learner autonomy and internal motivation as well as embrace goal setting adaptability. In turn, this may positively impact their journey towards becoming a true lifelong learner.

Methods: Target learners: Pediatric residents because they are in a crucial phase of their training, where they need to adapt to a self-regulated learning environment and develop adaptive expertise learner skills. Goals&Content: To empower pediatric residents with the skills required for self-regulated learning & adaptive expertise by using the Enneagram and Sure People's PRISM to encourage self-reflection, develop self-awareness, and enhance residents' agency, metacognitive goal-setting abilities, and motivation. It will consist of a series of workshops, small group sessions and self-reflection exercises. Duration: The project will span the duration of the pediatric residency training program (3 years). Workshops, small groups and self-reflection exercises will be integrated into their curriculum at strategic points throughout their training. This timeframe allows residents to apply their self-awareness insights progressively. Interactive Methods: Workshops will cover the Enneagram and PRISM system, thus helping residents understand their personality types, behavioral preferences and communication styles. They will learn to recognize strengths and barriers in their goal-setting behaviors as it pertains to their individualized learning plans. Through group and peer feedback sessions, residents will apply their insights to different clinical learning environment scenarios. Peer mentoring & regular reflection sessions will encourage ongoing self-awareness and goal-setting practices.

Evaluation Plan: To assess the impact of our program, we will employ a mixed-methods approach:

1. Annual Self-Assessments: Residents will complete the Self-Regulated Learning Perception scale every year. These assessments will measure their self-awareness, agency, metacognitive goal-setting abilities, and motivation over time. In parallel, we will also observe the PBLI-2 milestone trajectory over the three years (Practice-Based Learning and Improvement 2: Reflective Practice and Commitment to Personal Growth).
2. Qualitative Data Collection: We will conduct interviews and focus groups with residents to gather qualitative data. We will also review their submitted self-reflections. This will provide insights into how residents perceive the influence of self-awareness on their learning practices.
3. Long-Term Follow-Up: Long-term follow-up assessments will track residents' progress over time to determine the sustained impact of the program on their journey towards becoming lifelong learners.

Potential Impact: By cultivating self-awareness and adaptive expertise learner skills using the Enneagram and PRISM, this project can empower residents to take ownership of their learning, adapt to the demands of modern healthcare, and become lifelong learners. This approach can serve as a model for others seeking to enhance learner autonomy and internal motivation.

References:

- 1) Ricotta, D. N., Richards, J. B., Atkins, K. M., Hayes, M. M., McOwen, K., Soffler, M. I., ... & Schwartzstein, R. M. (2022). Self-Directed Learning in Medical Education: Training for a Lifetime of Discovery. *Teaching and Learning in Medicine*, 34(5), 530-540. DOI: 10.1080/10401334.2021.1938074
- 2) Branzetti J, Commissaris C, Croteau C, Ehmann MR, Gisondi MA, Hopson LR, Lai KY, Regan L. The Best Laid Plans? A Qualitative Investigation of How Resident Physicians Plan Their Learning. *Acad Med*. 2022 Nov 1;97(11):1691-1698. doi: 10.1097/ACM.0000000000004751. Epub 2022 May 24. PMID: 35612927.
- 3) Lockspeiser T. Critical Synthesis Package: Self-Regulated Learning Perception Scale (SRLPS). *MedEdPORTAL*. 2013;9:9585. https://doi.org/10.15766/mep_2374-8265.9585

A Mixed Methods Study of an Internet-Based Resident Resource in a Pediatrics Residency

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Problem Statement: Does enhanced accessibility and content enrichment increase usage of an online educational resource in a pediatric residency?

Rationale: The CHO Wiki is a web-based resource which hosts clinical, educational, and program-specific resources pertinent to pediatric residents at our program, including orientation to services, curated literature, clinical algorithms, and teaching guides. In the academic year of 2022-2023, blending an action research educational framework and quality improvement techniques, a project was initiated to improve the functionality and accessibility of the CHO Wiki as it was identified as an essential resident resource. Those improvements generated a significant rise in the utilization of the CHO Wiki. Following the PDSA methodology, we targeted further improvements based on a qualitative content review of direct user feedback.

Methods: Qualitative Methods: We began our qualitative data collection with a survey of end-user stakeholders. The evaluative survey was conducted at the end of the 2023 academic year. All 83 pediatric residents were asked about their experience with the CHO Wiki. The surveys were anonymous, and the questions ranged from which resources were utilized by residents (i.e. clinical practice guidelines, orientation to services, scholarly papers) to how residents accessed the Wiki (i.e. mobile device, PC, workstation). In addition, we implored the residents for suggestions to improve the CHO Wiki. A qualitative content review of the survey data was completed, and our study team identified areas of improvement based on these results. Targeted improvements to the CHO Wiki were instituted between late June and early July of 2023.

Quantitative Methods: We used Google Analytics to embed HTML tags within the CHO Wiki starting in August 2022. These tags captured web data, including page views, engagement time, clicks, and number of file downloads. The total daily page views and average daily views by week were trended from August 2022 to August 2023. An individual and moving average control (XmR Trend) chart was utilized to identify the overall trend and to visualize the change resulting from our targeted improvements. These changes included the creation of a mobile shortcut, the introduction of the CHO Wiki into intern orientation, and the expansion of sub-specialty-specific clinical resources.

Results: Qualitative Results: Per a qualitative and quantitative review of the surveys, residents utilized the CHO Wiki for "Orientation to Services" (92.9%), "Wards Resources" (69%), and "Clinical Practice Guidelines" (64.3%). Residents reported accessing the CHO Wiki via "Personal Computer" (88.1%), "Hospital Workstations" (73.8%), "Personal Mobile Device" (38.1%), and "Work Mobile" (11.9%). Residents' suggestions for improvements to the CHO Wiki were notable for several themes. Regarding content, they suggested the expansion of rotation orientation content, relevant scholarly publications, program-specific medical education content, and clinical practice guidelines. Regarding accessibility, they suggested the creation of a mobile shortcut and introduction to the CHO Wiki as part of the intern orientation.

Quantitative Results: Using Google Analytics, daily page views between Aug '22 and Aug '23 were averaged by week and analyzed with an individual and moving average (XmR Trend) chart. There was a significant correlation with $R_{xy} 0.482 > 0.273$ (McNeese, 1991) and slope of 1.16. The center line increased from 18.9 to 83.9 average daily views. The impact of historic improvements (addition of desktop shortcut in Oct '22 and Noon Conference review of CHO Wiki in Jan '23) and new targeted improvements (introduction of the Wiki to intern orientation in Jun '23 and addition of the mobile shortcut in Jul '23) was demonstrated by correlating data points above the UCL (upper control limit).

Potential Impact: Early data suggests that this set of targeted interventions has increased utilization of the CHO Wiki. With a global review of data and interventions, there are significant peaks after each

intervention, followed by stabilization to a new baseline, resulting in steady regular growth in the utilization of the CHO Wiki during the study period.

References:

- 1) Ho, D., Xiao, Y., Seagull, F. J., Sisley, A., Dutton, R., & Mackenzie, C. F. (2005). Handbooks or Mentors? the Role of a Resident Physician Manual in Resident Education. *Proceedings of the Human Factors and Ergonomics Society Annual Meeting*, 49(16), 1474–1477.
<https://doi.org/10.1177/154193120504901603>
- 2) McNeese, W. H. (1991). *Statistical methods for the process industries*. ASQC Quality Press.

Using the Disc Profile in Teaching, Problem Solving, and Innovation
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Idea: Use DiSC Profile to understand self, provide high quality education, build better workplace environment, and improve patient care through innovation.

Need: Most residency programs struggle with finding a way to keep residents engaged during didactics. However, it's shown that the more participation and collaboration that is required the more residents and students are willing to participate. Finding a way to engage groups by encouraging collaboration will be done by using the DiSC profile method. The DiSC tool was created in 1928 by William Moulton Marston in order to help improve teamwork, communication, and productivity in the workplace. The DiSC profile assesses concrete behaviors while the Myers-Briggs Type Indicator is a measure of personality type and based more on esoteric traits [1]. Therefore, workshops understanding different DiSC profiles will provide strong collaboration, and help leaders gain insight on how to better communicate with their colleagues, peers, and coworkers [2]. We will bring to the workshop participants education on DiSC profiles, and trial group collaboration based on their own profiles to improve increase innovation in the workplace, and build new connections and rapport.

Methods: Many lectures and group activities fail to engage its audience. Understanding learning styles, behavioral evaluation, and personality types can help achieve optimal success in creating efficient lesson plans and brainstorming new ideas.

In this workshop residents, clinical educators, or others with a role in problem solving or education will:

- 1) Gain better insight on their own learning styles, and dominant DiSC behavioral types in the four main profiles
- 2) Use the new knowledge gained on their own learning styles to compare similar groups/opposing groups
- 3) Identify own roles, have open discussion with likeminded groups and opposing groups on their own preference vs other preference in how to improve education and innovation
- 4) Identify how DiSC tools can build rapport between colleagues and patients after having a better understanding of self
- 5) Come up with new strategies on how to incorporate DiSC profiles in workplace for lectures, education, teamwork, and patient care

5 min: Introduction of DiSC profile

15 min: DiSC self assessment to understand self, strengths, and weaknesses with emphasis on work style and influence

20 min: Break into likeminded groups and opposing to discuss DiSC, thoughts, how to improve learning and patient care based on similar/opposing style

15 min: Breakout groups of choice to create lesson plan or activity on how to engage audience or build connection better

15 min: Summarize findings/new insight

5 min: Pick best new idea and prize given

Evaluation Plan: Having group based collaborations can aid in learning and making work place interactions more enjoyable. Residents and educators can tailor lectures based on DiSC profiles, and further use DiSC tools to understand their own strengths and weaknesses to build connections and rapport between colleagues, patients, and students. The DiSC profile will prepare residents and students to work together, gain confidence, and be more self aware throughout training. Workshop participants will be provided with a DiSC test and grouped together to better understand themselves [3] and see how like mindedness as well as opposing views can open up discussion and create the best work experiences in everyday life, help individuals improve patient/work relationships, and be more innovative.

After brainstorming new ideas, and methods, residents and educators can apply methods to lectures such as playing jeopardy as a form of audience engagement. Having group sessions with colleagues to discuss ideas with DiSC profiles in mind to open up more conversation. Applying these methods into the work place and see if there is a difference noted in involvement and connections between peers.

Potential Impact: Learning about personal strengths and weaknesses, combined with work place characteristics, and learning about others profiles can aid in building a better connection in the workplace, create a stronger environment with sense of belonging, and building rapport with patients by fostering understanding, patience, and higher quality patient care.

References:

- 1) RA, Hill PB. Myers Brigg. 2022 Sep 18. In: StatPearls [Internet]. Treasure Island (FL): StatPearls Publishing; 2023 Jan-. PMID: 32119483.
- 2) Slowikowski MK. Using the DISC behavioral instrument to guide leadership and communication. AORN J. 2005 Nov;82(5):835-8, 841-3. doi: 10.1016/s0001-2092(06)60276-7. PMID: 16355940.
- 3) Kowalski K. Self-Assessment and the DiSC. J Contin Educ Nurs. 2019 Aug 1;50(8):347-348. doi: 10.3928/00220124-20190717-04. PMID: 31356671.

The Impact of Covid 19 and Medical Lectures on Education and Development

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Problem Statement: This study explored the impact of Covid-19 on high school students' learning experience and desire to pursue medicine during the pandemic.

Rationale: Studies have illustrated the negative effects of COVID on education. According to a study conducted by Ren-Ma (2021) which focused on high school students, the majority of students reported feeling that online education was less effective in gaining knowledge. Additionally, Ashta (2023), demonstrated that multi-level interventions such as resuming in person class room experience can reduce the pandemic's effects on learning. Due to these critical reasons and recommendations, a study was developed to explore how providing monthly medical lectures would effect students' learning interest, as well as gain an understanding if there is an effect on their desire to pursue medicine related fields through presented medical topics.

Methods: The data for this study was obtained from the 11th grade class in the Health Science Pathway of Applied Technology High School (ATC) with a project-based approach located in Montebello, California. Data was collected from September 2022-May 2023. A total of 27 students participated in the data collection process through a randomized administered pre and post survey developed by resident physicians. Students included were from 1 singular class, all identified as underrepresented (n = 27) and there were no exclusion parameters.

A 14 item pre-questionnaire and a 17 item post-questionnaire were developed to measure the students' understanding of Covid-19, the impact of the pandemic on their learning experience, and the effect on interest in healthcare careers in medicine through the delivery of the system-based lectures. The developed questionnaires included quantitative and qualitative type inquiries to further gain insight through on the students' experiences through anecdotal information.

The pre-questionnaire was conducted at the beginning of the academic year in September 2022 with an introduction to the system-based lectures conducted by resident physicians. The post-questionnaire was conducted in June 2023 at the end of their academic year and included an update on Covid-19 related care and pandemic update.

The intervention implemented was a series of 9 systems-based lectures, 9 lectures presented by 8 resident physicians over the academic year.

Results: Of the 27 students included in the survey, there was no statistically significant impact of COVID on their education (p-value, 0.36393), their desire to pursue a career in medicine (p-value, 0.25785), or monthly medical lectures in their interest in medicine (p-value 0.5). Overall, 74% of students stated that COVID negatively impacted their education. Limitations in the study included small sample size, majority of the students enrolled in ATC were already interested in a career in healthcare, # of lectures and presenters available. The above limitations potentially contributed to the results of the study and should therefore be considered in subsequent studies.

Qualitative data in the form of written comments on the pre and post questionnaires were coded and quantified. The resulting quantitative data were used to convert comments into words or phrases to generate Word Clouds to increase comprehension through visualization of the most frequently reported written responses.

Word Cloud analysis revealed that the most frequently reported responses on the question regarding COVID impact on education demonstrated that the most reported words related to their experience were

“less focused” and “hard”. The qualitative responses in the questionnaire revealed a number of students reported being impacted negatively by COVID.

Potential Impact: The findings suggest COVID did not significantly impact the education of the students, as well as their desire to pursue a career in medicine. Additionally, our monthly medical lectures did not show a statistically significant change in interest in medical topics.

References:

- 1) Ashta, J. K., Weingart, R., & Gazmararian, J. A. (2022, November 22). The Impact of COVID -19 on Education Experiences of High School Students in Semi-Rural Georgia. *Journal of School Health*, 93(4), 257–265. <https://doi.org/10.1111/josh.13269>
- 2) Bletzer KV. Visualizing the qualitative: making sense of written comments from an evaluative satisfaction survey. *J Educ Eval Health Prof*. 2015 Apr 16;12:12. doi: 10.3352/jeehp.2015.12.12. PMID: 25959652; PMCID: PMC4427856
- 3) Ma, Z. R., Ma, W. H., Idris, S., Pan, Q. W., & Baloch, Z. (2021, June 19). COVID-19 impact on high school student’s education and mental health: A cohort survey in China. *World Journal of Psychiatry*, 11(6), 232–241. <https://doi.org/10.5498/wjp.v11.i6.232>

Teaching Systems Citizenship & Health Systems Science Via Interprofessional Healthcare Innovation

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Idea: HSS Innovation Fellowship: solving healthcare challenges in an interprofessional cohort of Pre-Clerkship, Engineering, & Health Professions students.

Need: The COVID-19 pandemic highlighted global healthcare delivery flaws, stressing the importance of health professionals adapting and responding to uncertainties and systemic challenges (Papanagnou et al., 2021). Health Systems Science (HSS) is increasingly vital in enabling professionals to comprehend care complexities and enhance outcomes, yet is underdeveloped in medical education (Maben-Feaster et al., 2023). Physicians must adopt patient-centered approaches to harness HSS, cultivate systems citizenship, shape their professional identities, and become master adaptive learners (Maben-Feaster et al., 2023). HSS integration in medical education faces hurdles: learners favor factual content, resist redundancy, and contend with crowded curricula (Gonzalo et al., 2020). Balancing traditional professional identities with evolving system-based competencies is challenging. There is an urgent need for physicians to explore creative, interprofessional, and actionable HSS applications in pre-clerkship medical education.

Methods: The proposed fellowship unites medical pre-clerkship, engineering, and allied health professions students to tackle healthcare challenges through innovation. Healthcare innovation is inherently ripe with collaboration, problem-solving, and lifelong learning potential through community, academia, and industry players. The fellowship aims to use an innovation lens to teach practical Health Systems Science (HSS) knowledge and patient-centered principles. The program involves interprofessional innovation teams guided by mentors, including community members, academia, and industry experts. It includes 16 online lectures over a year, with live sessions for discussion, role-play, case studies, and project-based learning. Project Prana Foundation, a healthcare innovation nonprofit, will pilot the program with a US medical/engineering school. Fellows can translate ideas into clinical practice, highlighting real-world HSS impact. The fellowship covers units in systems thinking, social determinants of health (SDOH), comparative health systems, human-centered design, theory of change models, and interprofessional collaboration techniques, and is designed in alignment with the American Medical Association's (AMA) HSS competencies. Reflection exercises, mentorship, and interprofessional networks will drive professional identity development and real-world application of HSS, addressing several persistent gaps in HSS implementation in medical education.

Evaluation Plan: The Health Systems Innovation fellowship follows the New World Kirkpatrick Model for evaluation, encompassing four levels: Results (Level 4), Behavior (Level 3), Learning (Level 2), and Reaction (Level 1) (Kirkpatrick & Kirkpatrick, 2016). Unlike the old model, this approach plans and implements evaluation before instruction (Kirkpatrick & Kirkpatrick, 2016). The evaluation plan will align with Project Prana Foundation's mission and health systems science goals defined by the AMA and Maben-Feaster et al., 2023. This model offers a structured framework for assessing fellowship effectiveness. To evaluate effectiveness of this program on fellows, patients, and populations, surveys, focus groups, observations, and project evaluations will be used to measure systems thinking, teamwork, and innovation. The ADDIE model, Gagne outcomes, and cognitive task analysis will guide curriculum and evaluation plan development, in alignment with the Kirkpatrick Model. Evaluating prior knowledge, professional behaviors, and healthcare improvements will assess competencies' real-world impact.

Potential Impact: This fellowship fosters health systems thinking, teamwork, and innovation, empowering participants to improve healthcare systems, reduce costs, and enhance health outcomes. Fellows gain practical skills and witness the translation of HSS principles into real-world impact, crucial aspects currently missing in HSS implementation in medical education.

References:

- 1) Gonzalo, J. D., Davis, C., Thompson, B. M., & Haidet, P. (2020). Unpacking medical students' mixed engagement in health systems science education. *Teaching and Learning in Medicine*, 32(3), 250-258.
- 2) Maben-Feaster, R., Hammoud, M. M., Borkan, J. M., Dewaters, A., Gonzalo, J. D., & Starr, S. R. (2023). *Health Systems Science Education: Development and Implementation*. Elsevier.
- 3) Papanagnou D, Jaffe R, Ziring D. (2021). Highlighting a curricular need: Uncertainty, COVID-19, and health systems science. *Health Science Reports*. <https://doi.org/10.1002/hsr2.363>.

Assessing Efficacy of Adverse Event Reporting Curriculum in Graduate Medical Education

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Idea: Implementation of an educational workshop to transform attitudes, improve competencies, and decrease barriers to housestaff adverse event reporting.

Need: The under-reporting of adverse events has been a significant issue in patient and healthcare staff safety, and prevents improvement of individual and systemic errors in healthcare. While residents are exposed to adverse events during their clinical training, the majority of housestaff historically have not received training in adverse event reporting, contributing to widespread under-reporting (1). The Accreditation Council for Graduate Medical Education (ACGME) now includes mandatory housestaff event training as a core requirement. While residents and fellows mainly receive patient safety training at orientation and through online modules, most are unable to recall the details of this training (2). There is also lack of insight into how adequate reporting prevents future errors from occurring (3), underscoring the need for a dedicated and interactive adverse event training workshop. Furthermore, medical trainees perceive that reporting adverse events will lead to damage of their personal career and professional relationships (3), demonstrating the importance of decreasing barriers to event reporting.

Methods: The initial phase of the project involved creating educational workshops on adverse event reporting designed for housestaff. This workshop includes the following core components: 1) a teaching case with a sample adverse event; 2) discussion of barriers to adverse event reporting; 3) a small group breakout session targeted towards learning from others' shared experiences; 4) solutions to improve reporting rates; and 5) instruction and sample submission of an adverse event report within the University of California, San Diego (UCSD) Health system. We developed a survey for learners to complete prior to and after the workshop to assess changes in attitudes and competencies. This workshop is supported by Internal Medicine program leadership and is to be piloted amongst Internal Medicine residents at UCSD through the academic year of 2023-2024. Starting in Fall 2024, we will be collaborating with leadership across Graduate Medical Education (GME) programs to introduce the workshop into other subspecialties.

Evaluation Plan: A survey will be administered to assess pre-workshop and post-workshop attitudes, competencies, and knowledge of adverse event reporting. This survey was piloted and revised through several iterations to optimize validity and reproducibility of the instrument. Data will be analyzed with students' paired t-test to assess the difference in each of these domains before and after the workshop. Rates of missed event reporting and analysis of barriers will also be quantified. Additionally, real-time event reporting data within the UCSD Health system will be accessible for this project. We will compare housestaff reporting rates before and after the intervention. Using descriptive statistics, we will also quantify characteristics of housestaff event reporting, such as event type, category of staff member involved in the event, and medical unit involved.

Potential Impact: Through the workshop, we hope to advance housestaff competencies and transform attitudes about reporting adverse events. If effective, this workshop could be piloted at other institutions and ultimately elucidate systemic patterns of adverse events in healthcare practices.

References:

- 1) White AA, Gallagher TH, Krauss MJ, et al. The attitudes and experiences of trainees regarding disclosing medical errors to patients. *Acad Med.* Mar 2008;83(3):250-6.
doi:10.1097/ACM.0b013e3181636e96
- 2) ACGME. National Report of Findings 2016 Issue Briefs: Patient Safety. ACGME. ISBN: 978-1-945365-03-4

- 3) Szymusiak J, Walk TJ, Benson M, et al. A Qualitative Analysis of Resident Adverse Event Reporting: What's Holding Us Back. *Am J Med Qual.* Mar/Apr 2020;35(2):155-162.
doi:10.1177/1062860619853878

Impostor Phenomenon and Clinical Competency in Pediatric Residents

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Idea: A longitudinal survey to evaluate the correlation between experiences of impostor phenomenon (IP) and clinical competency in pediatric residents.

Need: Impostor syndrome is the phenomenon in which high-achieving individuals experience persistent self-doubt despite external evidence of success. Impostorism is associated with higher rates of physician suicidal ideation, and lower rates of job fulfillment and pursuits of leadership opportunities (1). In an era of high physician burnout, more information is needed to understand IP experiences in trainees. As healthcare seeks to diversify its workforce, data is particularly needed to understand IP experiences for trainees who are underrepresented in medicine (URM). No studies to date have linked impostor experiences with clinical competency data. Studies of medical students have shown no correlation between board exam scores and IP experiences, although board exam scores are not indicative of clinical competency (2). If trainees with high impostorism have low clinical competency, then interventions should be targeted at building resident medical knowledge and self-efficacy through effective learning plans. If high IP experiences are correlated with high competency scores, then interventions should address perceptions and sources of impostorism.

Methods: All pediatric residents at Children's Hospital Los Angeles (CHLA) will be invited to complete a longitudinal, online survey of the Clance IP Scale and demographic characteristics. The Clance IP scale is a 20-item validated scale that has been used in many prior studies of impostorism (3). Demographic characteristics will include self-identification of gender, LGBTQ+ status, race, and first-generation college student status.

As part of the Accreditation Council of Graduate Medical Education (ACGME) requirements, all training programs must meet twice annually to review trainee development via the ACGME milestone survey, a 23-item survey including six domains of physician competency: systems-based practice, patient care, medical knowledge, practice-based learning and improvement, interpersonal and communication skills, and professionalism. Programs synthesize evaluations of resident performance on clinical rotations into an aggregate program evaluation of resident milestone achievements for each resident. At CHLA, residents are additionally requested to self-evaluate their clinical competence through the same ACGME milestone survey semi-annually. With participant consent, Clance IP and demographic characteristic survey responses will be linked and compared to both self-evaluation and program evaluation of resident pediatric competency.

Evaluation Plan: Multivariate analysis of variance will be used to compare resident IP scores, self-evaluated pediatric milestones, and program evaluation of clinical competency scores over time. This study will examine how IP scores increase or decrease throughout different stages of training, comparing levels of doubt when starting residency to nearly graduating residency. This study will assess if residents with higher IP scores perceive their competency to be lower and reflect these perceptions in their self-evaluations. It will then compare whether program evaluations are consistent with those self-evaluations. Demographic characteristics associated with higher versus lower IP scores will be reported.

Potential Impact: To improve trainee competency and wellbeing, data is needed to understand resident impostor experiences. This study will clarify whether interventions should target clinical knowledge and execution versus perceptions of impostorism. It may open opportunities to better support residents who are URM at individual and institutional levels.

References:

- 1) Bravata DM, Watts SA, Keefer AL, Madhusudhan DK, Taylor KT, Clark DM, Nelson RS, Cokley KO, Hagg HK. Prevalence, Predictors, and Treatment of Impostor Syndrome: a Systematic Review. *J Gen*

Intern Med. 2020 Apr;35(4):1252-1275. doi: 10.1007/s11606-019-05364-1. Epub 2019 Dec 17. PMID: 31848865; PMCID: PMC7174434.

- 2) Shreffler J, Weingartner L, Huecker M, Shaw MA, Ziegler C, Simms T, Martin L, Sawning S. Association between Characteristics of Impostor Phenomenon in Medical Students and Step 1 Performance. *Teach Learn Med.* 2021 Jan-Mar;33(1):36-48. doi: 10.1080/10401334.2020.1784741. Epub 2020 Jul 7. PMID: 32634054.
- 3) Chrisman SM, Pieper WA, Clance PR, Holland CL, Glickauf-Hughes C. Validation of the Clance Imposter Phenomenon Scale. *J Pers Assess.* 1995 Dec;65(3):456-67. doi: 10.1207/s15327752jpa6503_6. PMID: 16367709.

Using Social Learning Tools to Improve Engagement and Performance in Undergraduate Medical Education

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Idea: We sought to shift from passive to active learning using flipped classroom strategies by leveraging social annotation tools.

Need: Around 60-80% of students typically neglect reading for their classes, often due to the challenges of digesting complex material, a perceived lack of necessity, or no direct impact on grades. Our goal was to increase engagement, reduce cognitive load, and foster self-directed learning while potentially improving exam performance.

Social annotation technologies, with features like annotation and upvoting, enhance inclusivity and interaction among students and instructors. This creates an inclusive learning space where diverse voices are valued.

By using these tools, students can raise questions and seek clarification before class, better preparing them for active participation.

Research shows that social annotation tools increase reading completion and engagement. They've also been linked to higher exam scores in a flipped classroom setting.

Our study evaluated the impact of a social annotation learning tool on undergraduate medical education. Our aim was to boost engagement, reduce cognitive load, promote self-directed learning, and potentially enhance academic performance.

Methods: Within a first-year introductory undergraduate medical physiology course, a social annotation tool (Perusall) was utilized as preparatory material for students (n=125) within a flipped classroom session for the basic science course. We hypothesized that using a social annotation tool as preparatory material for a flipped classroom would increase student engagement and motivate reading through social annotation and shared understanding, ultimately enhancing academic performance. This strategy was compared to the common practice of providing students with a pre-recorded lecture as preparatory material for a second flipped classroom within the same course. Students took an assessment before (pre-quiz) and after (post-quiz) to assess knowledge acquisition and engagement with both formats. Student engagement with the social annotating tool and the pre-recorded lecture video was also recorded to compare levels of engagement. Additionally, performance on NBME midterm and final exam questions mapping back to content from each of the flipped classrooms was recorded for comparison.

Evaluation Plan: Student engagement with the material (e.g., highlighting, commenting, upvoting) was observed. We hypothesize that there will be a significant increase in academic performance when students used the social annotating tool as compared to using a pre-recorded lecture in preparation for a flipped classroom. We also hypothesize that the use of Perusall will enhance academic performance on midterm and final exam content as compared to that of the pre-recorded lecture. A paired sample t-test will be used to identify any potential significant differences between the academic performances when using the social annotating tool, and the pre-recorded lecture. Descriptive statistics will be used to identify the performance on midterm and final exam for each learning material type.

Potential Impact: Social annotation allows students to read and learn together, increasing social learning & inclusion. Educators may use the results to incorporate social annotation, thereby integrating more active learning. With social annotation, our findings support the idea that there may be an expected improvement in performance & retention of course material.

References:

- 1) Bakermans, M., Pfeifer, G., San Martín, W., & LeChasseur, K. (2022). Who writes and who responds? Gender and race-based differences in open annotations. *Journal for Multicultural Education*, 16(5), 508-521.
- 2) Kalir, J.H. (2022). Designing a Social Learning Analytics Tool for Open Annotation and Collaborative Learning. In: Prinsloo, P., Slade, S., Khalil, M. (eds) *Learning Analytics in Open and Distributed Learning*. SpringerBriefs in Education(). Springer, Singapore.
- 3) Suhre, Cor & Winnips, Koos & Boer, Vincent & Valdivia, Pablo & Beldhuis, Hans. (2019). Students' experiences with the use of a social annotation tool to improve learning in flipped classrooms. 10.4995/HEAD19.2019.9131.

Improving the Relevancy of General Anatomy Dissections by Introducing Surgical Scenarios

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Idea: To improve student engagement and the educational capacity of General Anatomy lab by adding surgical case scenarios to each dissection.

Need: The general anatomy (GA) laboratory experience is a multifaceted student experience that introduces the basics of human anatomy, encourages team-based learning, and instills ethical responsibility to the students' "first-patient"^{1,2}. This process was recently modified at our medical school to emphasize patient safety by including "time-outs" prior to each dissection simulating the actual time-out process completed before every surgical procedure. However, there were concerns about student engagement with the time-outs due to a lack of relevance to the specific dissection that is being conducted. While supplementary educational materials provide some clinical connection, we believe that there is room to improve the clinical relevance of these anatomy laboratory encounters through the use of surgical scenarios.

Methods: A group of 4 medical students who completed the GA course at a large, midwestern medical school and a full-time faculty member collaborated to create 10 surgical scenarios (one for each GA laboratory encounter) to be used in the 2023-2024 first-year GA course. The surgical scenarios were created using peer-reviewed and validated educational materials and were reviewed for accuracy by the course director. First-year students completed pre- and post-surveys after each dissection consisting of Likert scale and open-ended questions assessing the perceived relevance of the dissection after reading the surgical scenario as well as student engagement. This methodology will be expanded to cover the remaining 20 dissections until the end of the course in March 2024.

Evaluation Plan: To evaluate the effectiveness of adding surgical scenarios to the time-out procedure and anatomy lab dissections as a whole, the open-ended questions asking about the diagnosis, surgical intervention, and reviewed labs/imaging will be assessed for student engagement and relevance of course material. The accuracy of time-out completion forms should provide insight on how effectively students are engaging with the material and communicating with one another. The post-dissection likert questions serve to understand if the time-out process is more relevant, if it enhanced the students' understanding of the material, and if it improved the students' confidence in answering anatomy questions testing identification and function. As this is the first year that the scenarios are being implemented, this data will be used in the future as further modifications are made to assess the effectiveness of those new changes. Another consideration for the future is to introduce operative reports to provide students with context on how a surgeon might approach the related surgical scenario and the relevance of the anatomical dissection to surgery.

Potential Impact: We hope to identify the benefits of reviewing surgical scenarios, completing time-outs, and handing off information to another dissecting team as measures of the quality of education applicable to clinical practice. Our goal is to enhance the relevance of the time-out and anatomy dissections.

References:

- 1) Craig S, Tait N, Boers D, McAndrew D. Review of anatomy education in Australian and New Zealand medical schools. ANZ J Surg. 2010 Apr;80(4):212-6. doi: 10.1111/j.1445-2197.2010.05241.x. PMID: 20575945.
- 2) Weeks SE, Harris EE, Kinzey WG. Human gross anatomy: a crucial time to encourage respect and compassion in students. Clin Anat. 1995;8(1):69-79. doi: 10.1002/ca.980080113. PMID: 7697517.

Teaching Students to Navigate Clinical Encounters for Adolescents with Chronic Skin Conditions

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Idea: Provide rotating students in dermatology tools to elicit patient needs, assess quality of life, and consider patient preferences in determining care.

Need: During patient encounters in dermatology clinics, learners, regardless of attending preference, might be reticent to engage in Shared Decision-Making (SDM) with adolescent patients and their families. Barriers to student confidence include limited knowledge regarding specific dermatological conditions, lack of familiarity with the varied requirements for monitoring biologics, and unclear expectations regarding documentation. Despite its acknowledged benefits to both patients and clinicians, teaching SDM to medical students in a dermatology clinical setting has not been studied extensively (1).

Methods: Building on "A visit guide for adolescent hidradenitis suppurativa: Bridging the divide between pediatric and adult care," medical students and UCSD faculty worked together to design and implement Clinical Navigator Tools for use by medical students, residents, pediatric dermatology fellows, and physician-assistants in clinic with adolescent patients suffering from chronic skin conditions (2). Inclusion of best practices for management of biologics was done by reviewing Society for Pediatric Dermatology, American Academy of Dermatology, and manufacturers' recommendations as well as completing a critical literature review. Clinical navigator tools also included instructions on use and scoring of the Teenager's Quality of Life (T-QoL) index, a validated quality of life measure publicly available and published by Cardiff University (3).

Evaluation Plan: Clinical navigator tools at various stages of development went through an iterative process of refinement by learners, clinicians, and faculty to ensure they enhanced shared decision-making in clinical management. Feedback from medical students and residents was elicited via formal rotation evaluation. Assessment of the tools also included formal peer review processes and publication of patient-centered materials.

Potential Impact: Our Clinical Navigator Tools provide a model for experienced clinicians to better structure clinical encounters for teaching shared decision-making to medical students. This model, if adopted broadly among clinical faculty, has the potential to foster innovations in teaching shared decision-making and improve patient care.

References:

- 1) Morrison T, Johnson J, Baghoomian W, et al. Shared Decision-making in Dermatology: A Scoping Review. *JAMA Dermatol.* 2021;157(3):330-337. doi:10.1001/jamadermatol.2020.5362
- 2) Toledo I, Lee SS, Park HH, Vuong C, Conic RRZ, Hightower GK. A visit guide for adolescent hidradenitis suppurativa: Bridging the divide between pediatric and adult care. *JAAD Int.* 2022;6:84-85. Published 2022 Jan 16. doi:10.1016/j.jdin.2021.11.007
- 3) M.K.A. Basra, M.S. Salek, D. Fenech, A.Y. Finlay, Conceptualization, development and validation of T-QoL© (Teenagers' Quality of Life): a patient-focused measure to assess quality of life of adolescents with skin diseases, *British Journal of Dermatology*, Volume 178, Issue 1, 1 January 2018, Pages 161–175, <https://doi.org/10.1111/bjd.15853>

Emergency Medicine Leadership, Education, and Developing Scholars (EM Leads)

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Idea: Implementing EM LEADS, an in-depth certificate program for medical students focused on cultivating skills in leadership, education, and scholarship.

Need: Most medical schools have student interest groups (SIGs) for different specialties but may not have longitudinal skills training incorporated into these groups. The Spencer Fox Eccles School of Medicine has a required Emergency Medicine clerkship in MS4 year but limited early opportunities for building EM skillsets (1). Additionally, as the residency application process changes, students have an increasing need for leadership and clinical experiences. EM LEADS was developed to prepare medical students to succeed during their EM clerkship, sub-internships, residency, and as attendings. The EM LEADS program serves as a platform for medical students to develop leadership skills, pursue connections with faculty, engage in research, evaluate EM literature, and mentor their peers and colleagues. Graduates of a similar 1-year long program reported feeling well-equipped to start EM residencies and stated that additional EM training was beneficial to their careers (2). Higher numbers of hours spent practicing EM-specific clinical skills, such as intubations and ultrasound, have been shown to improve performance in residency (3).

Methods: During the 2022-2023 academic year, the EM Interest Group (EMIG) Leadership, EM Residency Program Leadership, and EM Fellowship Directors established a rigorous certificate program for medical students interested in EM. The program consists of various activities tailored to the knowledge and skill sets of each participating class year. Expectations shift from learner in the first year to teacher and mentor in the latter years. The certificate has four major categories with associated requirements: 1) Dedication to EM: shadowing in the Emergency Department, attending an EM Career Panel or EM Match Panel, and joining a national EM organization. 2) Leadership: participating in a communication workshop, attending a leadership book club, holding a leadership role at the local or national level, and leading an EM Tiered Mentorship group. 3) Education: learning and then teaching a series of EM skills and procedural workshops with an associated "How to Teach" workshop. 4) Scholarly activity: EM Residency or Fellowship Journal Club, CITI training, development, and presentation of a scholarly project. EMIG leadership will utilize QR codes to track attendance at events. The certificate checklist will be verified by the EMIG advisor. Students who complete the certificate will be honored at the University of Utah EM Research Symposium. The certificate is intended to be completed at the beginning of the M4 year and be a prominent experience on the new ERAS application.

Evaluation Plan: Evaluation of EM LEADS will encompass student feedback, program outcomes, and faculty assessment. Post-session surveys will be sent to students and facilitators to assess appropriateness and delivery of content. Upon completion of the certificate program, students will be asked to complete a brief survey at the end of their first EM sub-internship, after residency match, and at the end of their first year of EM residency to better understand program outcomes and areas of growth for the program. The University of Utah EM Program Leadership team will also be surveyed to determine the impact of the program on residency applications.

Potential Impact: EM LEADS will serve as a template for student interest groups at other schools on how to longitudinally integrate specialty training in medical school. In addition, it will prepare medical students to succeed in residency through the development of multiple skills that they can highlight within one experience on ERAS applications.

References:

1) <https://medicine.utah.edu/programs/md/curriculum/courses>

- 2) Kman NE, Bernard AW, Martin DR, Bahner D, Gorgas D, Nagel R, Khandelwal S. Advanced topics in emergency medicine: curriculum development and initial evaluation. *West J Emerg Med.* 2011 Nov;12(4):543-50. doi: 10.5811/westjem.2011.2.2095. PMID: 22224157; PMCID: PMC3236174.
- 3) Costantino TG, Satz WA, Stahmer SA, Dean AJ. Predictors of success in emergency medicine ultrasound education. *Acad Emerg Med.* 2003 Feb;10(2):180-3. doi: 10.1111/j.1553-2712.2003.tb00038.x. PMID: 12574018.

Effect of Peer Facilitation in Anatomy Small Group Curriculum: Academic Performance and Retention

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Idea: Assign students as their own group's facilitators to lead peers in anatomy small group discussions and activities.

Need: Small group learning has been shown to enhance students' learning experiences, and a facilitator encourages more active participation and improves self-directed learning (1). This facilitator role is similar to Reciprocal Peer Tutoring (RPT), which involves structured switching of tutor and tutee roles in groups of the same academic level. It has been shown that RPT is effective, with one study citing 97% of students agreeing that RPT increased their long-term retention of their teaching topic related to anatomical dissections (2). Furthermore, although small group learning is an effective educational paradigm, there are many challenges with ensuring that students are engaging with the format as designed, especially with regards to the individual preparation required before each session (1). In order to encourage students to actively participate during the discussions, facilitation of each small group may be necessary to help develop a sense of accountability (3). Therefore, one possible solution to this issue in anatomy education could be the inclusion of a group facilitator for each group.

Methods: This study will evaluate the effects of a student as a group facilitator in the anatomy component of the integrated systems-based pre-clerkship curriculum at Rutgers New Jersey Medical School (NJMS). Anatomy at NJMS involves students completing an assigned reading prior to each session, where they then discuss the material in a small group setting and complete class activities. Students are assessed every 1-3 sessions individually and as a group through a summative multiple choice question quiz. This study explores the Class of 2026 throughout the systems portion of their pre-clerkship curriculum (i.e., January 2023-January 2024). The addition of the facilitator role asks the facilitator to prepare to lead their small group through discussion of the readings and completion of class activities. This role rotates amongst group members such that each student acts as a facilitator multiple times throughout the anatomy curriculum, while acting in a participatory role in all the other sessions. After each session, students are asked to complete a survey about their preparation and if their role affected their preparation. One month after each quiz, students are asked to complete an ungraded retention quiz. All participation is voluntary. Collectively, this data will be evaluated to measure the effect of the group facilitator role compared to a participating role with regards to their approach to preparation and long-term retention of material.

Evaluation Plan: Outcomes will be measured through: 1) Preparation Surveys: Students voluntarily complete a survey after each session that collects information on their preparation and reflects on their role as either the group facilitator or participating group member for that set of sessions. 2) Class Quiz Scores and Averages: Anatomy quiz scores will be collected from individuals who completed the informed consent to compare any score differences between students in the facilitator role and the group participant role. Anatomy quiz average scores will also be collected from both the Class of 2025 and 2026 to compare if the addition of a group facilitator had an effect on quiz performance across the class. 3) Long-term retention quizzes: Students are asked to voluntarily complete an ungraded 3 multiple choice question retention quiz one month after each graded quiz. The goal of this assessment is to compare content retention between students in the facilitator role and the group participant role. The data are currently being explored and will be evaluated for the poster.

Potential Impact: Implementation of a group facilitator role may result in deeper engagement with the anatomy subject material due to increased preparation, which may also lead to improved long-term retention of the content. This model could be adapted for other programs and other academic disciplines utilizing a small group format in their curriculum.

References:

- 1) Burgess A, van Diggele C, Roberts C, Mellis C. Facilitating small group learning in the health professions. *BMC Med Educ.* 2020 Dec 3;20(Suppl 2):457.
- 2) Krych, A. J., March, C. N., Bryan, R. E., Peake, B. J., Pawlina, W., & Carmichael, S. W. (2005). Reciprocal peer teaching: Students teaching students in the gross anatomy laboratory. *Clinical Anatomy*, 18(4), 296–301.
- 3) Bay, B. H., Tay, S. S., & Srinivasan, D. K. (2020). Facilitating Small Group Learning. *Teaching Anatomy*, 133–141.

Medical Undergraduate Peer Learning Program Quality Improvement Project: Topic Specific Peer Tutors.

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Idea: Restructuring the peer learning program to mitigate peer tutor stressors and enhance learners' grasp of medical topics via specialized peer teaching.

Need: The peer learning program aims to foster collaborative learning and develop students' teaching skills. Each semester, interested 3rd to final-year medical students voluntarily join the program. They are organized into teams, led by two senior (final-year) medical students as near-peer tutors. Junior students interview and examine patients before each class and present cases in class. Peer tutors lead case discussions, followed by bedside visits to confirm examination findings. These sessions occur after school hours.

Stressors that affect peer tutors include leadership role demands, extra workload to plan teaching sessions, and gaps in medical knowledge (Hundertmark, et al. 2019). Furthermore, some learners reported that tutors lacked a clear sense of direction during lessons (Alexander, et al. 2022).

A 6-item 5-point Likert scale qualitative survey showed that 64% of peer tutors felt underprepared to address student questions. Furthermore, 68% reported time constraints to update their understanding of study material before tutoring sessions. 71% endorsed the concept of "Topic Specific Peer Tutoring" to enhance their role as tutors. These data highlight the need to address these issues to create an effective peer-tutoring program

Methods: This intervention is a medical peer learning program that recruits participants through an online form distributed via email. It aims to enhance the program to reduce preparation effort and knowledge gaps. 30 final year peer tutors and 60 3rd-4th year junior students are participating. 2 peer tutors and 4 junior students are randomly allocated into each team. 1st and 2nd year students are excluded. 8 teams (Control Group) will remain with current teaching practices, the other 8 (Experimental Group) with topic-specific peer tutors. The cycle will continue for a semester.

Each peer tutor will specialize in teaching a topic. E.g. Peer Tutor 1 focuses on cardiac failure, creating teaching plans centered around this topic. Similarly, Peer Tutor 2, focusing on stroke, will develop teaching plans for it. They will review each other's teaching plans and revise on their partner's topic to provide mutual support during class.

If the topic is cardiac failure, junior students will take history and examine such patients from the wards. The rest of the session will proceed as usual. In the second session, the second peer tutor will lead, with the teaching focus shifting to stroke. In the third session, the junior group will be rotated, the peer tutors will split and be paired with a new peer tutor to foster knowledge exchange.

Data collected for outcomes will be analyzed using the Mann-Whitney U test in IBM SPSS, significance level at <0.05. Descriptive statistics will focus on the mode.

Evaluation Plan: To use the Context/Input/Process/Product (CIPP) Model (Stufflebeam and Coryn, 2014: 312-313), Context evaluation was done in the Need/Rationale section, which justifies the intervention.

In the Input evaluation phase, I assessed the availability of resources and determined the feasibility of the program's implementation. For instance, a classroom, learning materials, and manikins are readily available at the university. The sessions allow flexible timing according to the group's preferences. A pilot session could be done before implementation. If the number of participants exceeds the provision of resources, sessions will require scheduling to prevent overcrowding of hospital wards, manikins, and classrooms.

The Product evaluation, post-implementation, will involve an online, anonymous, mixed-method questionnaire for students to provide feedback after each teaching session, guiding program revisions.

At the end of semester, the Process evaluation will involve interviewing participants on perceived benefits, improvement suggestions, and a post-survey using the same 6-item Likert scale survey in the Need/Rationale section to gauge the intervention's effectiveness.

Potential Impact: Creating a platform for students to teach in a topic of their interest encourages a peer education culture. Teaching specific topics can deepen senior students' grasp of medical topics in their areas of interest. Success of the program could inspire adoption and adaptation by other institutions, fostering research on scalability and customization.

References:

- 1) Alexander, S.M. Dallaghan, G.L.B. Birch, M. Smith, K.L. Howard, N. and Shenvi, C.L. (2022) What Makes a Near-Peer Learning and Tutoring Program Effective in Undergraduate Medical Education: a Qualitative Analysis. *Med Sci Educ*, 32 (6): 1495-1502.
- 2) Hundertmark, J. Alvarez, S. Loukanova, S. and Schultz, J.H. (2019) Stress and stressors of medical student near-peer tutors during courses: a psychophysiological mixed methods study. *BMC Med Educ*, 19 (1): 95.
- 3) Stufflebeam, D. and Coryn, C. (2014) *Evaluation theory, models, & applications*. 2nd edn. San Francisco: Jossey-Bass.

Assessing Pre-Clinical Medical Students' Knowledge and Attitudes Toward High-Value Care

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Idea: How do matriculating medical students understand healthcare quality, value, and outcomes?

Need: Despite a national focus on increasing value in healthcare through improved quality and better resource stewardship, high-value care (HVC) curricula has been more slowly adopted in undergraduate medical education compared to graduate medical education or early career training [1,2]. AAMC guidelines state that graduating medical students should gain HVC competencies such as cost-awareness and pre- and post-test diagnostic probability, yet our experiences and the literature emphasize that medical education has not yet fulfilled this guideline [3,4].

UC San Diego School of Medicine offers two preclinical courses with learning objectives that include HVC concepts. Assessing the baseline attitudes and knowledge of HVC in matriculating medical students will allow us to measure how existing curricula shape students' attitudes and knowledge. The results may also serve to substantiate the concern that HVC concepts may not be adequately represented in preclinical medical school curriculum, highlighting the potential need for increased efforts.

Methods: This study aims to evaluate 50 first-year medical students at UC San Diego School of Medicine prior to exposure to HVC curriculum in the first year of medical school using the Maastricht HVCCC Attitude Questionnaire (MVAQ), which includes a set of validated measures to evaluate the attitudes of various stakeholders towards High-Value, Cost-Conscious Care (HVCCC) [5]. We will present findings on the initial results of the survey which assesses pre-knowledge of matriculating medical students at UC San Diego.

Future steps will include a second evaluation, which will be administered in May 2024, that will utilize the same validated measures in a post-exposure survey. A paired t-test will compare the pre and post-survey results.

We will use the survey results to assess how existing curricular elements and extracurricular opportunities facilitate competencies in HVC concepts. Results may also help facilitate dialogue with UC San Diego School of Medicine administration about how best to develop HVC curricula for future students.

Evaluation Plan: UCSD currently offers two preclinical courses that include HVC learning objectives. The first is a case-based system science course recently incorporated into the standard preclinical curriculum. The second is a preclinical elective titled Volume to Value, which consists of Interactive Learning Modules in Value-Based Healthcare from Dell Medical School and a guest-speaker series exploring HVC topics such as healthcare waste, measuring health outcomes, and performance-based payment models.

Extracurricular HVC opportunities at UCSD include a newly established summer research grant in HVC, participation in a national Value-Based Medicine Case Competition, and Journal Clubs focused on discussion of HVC literature. The Value-Based Medicine Student Interest Group also has student-run projects including clerkship badges with tips from Choosing Wisely and a cost-calculator tool.

The study will measure any additional benefit of the elective course and extracurricular opportunities in tandem with the updated standard preclinical curriculum to discern changes in attitudes or knowledge. Ultimately, this study will help in developing curricula that can improve medical students' understanding of and attitudes towards high-value care.

Potential Impact: This project will inform future HVC curricular interventions to help medical students develop the skills necessary to promote effective resource-stewardship and high quality patient care.

References:

- 1) Erath A, Mitchell M, Salwi S, Liu Y, Sherry A. The Sooner the Better: High-Value Care Education in Medical School. *Acad Med.* 2019;94(11):1643-1645. doi:10.1097/ACM.0000000000002881
- 2) Flynn T, Call S, Carraccio C, et al. Core Entrustable Professional Activities for Entering Residency: Faculty and Learners' Guide. 2014. Washington, DC: Association of American Medical Colleges.
- 3) Weinberger SE. Providing high-value, cost-conscious care: a critical seventh general competency for physicians. *Ann Intern Med.* 2011;155(6):386-388. doi:10.7326/0003-4819-155-6-201109200-00007
4. Korenstein D. Charting the Route to High-Value Care: The Role of Medical Education. *JAMA.* 2015;314(22):2359-2361. doi:10.1001/jama.2015.15406
5. Mordang, S.B.R., Könings, K.D., Leep Hunderfund, A.N. et al. A new instrument to measure high value, cost-conscious care attitudes among healthcare stakeholders: development of the MHAQ. *BMC Health Serv Res* 20, 156 (2020). <https://doi.org/10.1186/s12913-020-4979-z>

Joining Forces: Military Academic Enrichment Elective

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Idea: Revamping and adapting our current Military Academic Enrichment Elective to align with the requirements of our new MCWFusion Curriculum.

Need: In 2021, the U.S. was home to 16.5 million veterans, about 6.4% of the population. (1) While many associate veteran healthcare primarily with the Veterans Affairs (VA), it is crucial to acknowledge that not all veterans qualify for VA healthcare, and barriers like geographic access and specialized needs persist. (3) Medical professionals will inevitably encounter veteran patients, yet U.S. med education inadequately prepares them for this unique context. (2) Despite the 2011 "Joining Forces" initiative, few med schools adapted their curricula. (1) This gap necessitates intervention. From 2019-21, the Medical College of Wisconsin (MCW) administered a military-focused elective, paused due to COVID-19 challenges. In 2023, MCW introduced the new Fusion curriculum, featuring "spiral weeks" focusing on professional development threads: Patient Care Skills, Interprofessional Education & Practice, Health System Science & Patient Safety, Health Equity, Critical Thinking, Communication, and Character. We propose revamping the existing elective to align with the new Fusion curriculum's "spiral weeks". This elective aims to be a pioneering model, equipping med students with essential skills for delivering high-quality, vet-tailored care.

Methods: In our revised iteration of the elective, we have made modifications to enhance its effectiveness. The key changes include a reduction in the number of sessions from 7 to 6, with session duration shortened from 2 hrs to 1.5 hrs. Additionally, we are in the process of developing an Objective Structured Clinical Examination (OSCE). Moreover, we plan for expansion to our satellite campuses, enabling virtual participation for students. The elective will be offered for M1/M2's in 24-25, where instructors will be using interactive groups, case-based learning, and simulated interviews. The outline of sessions: 1) *Battlefront to Homefront*: Designed for students to comprehend the spectrum of vet healthcare, spanning from the pre-deployment, deployment, and post-deployment phases of care (blast/traumatic brain injuries) 2) *Post-Traumatic Stress Disorder (PTSD)*: Strategies for addressing challenging situations, initiating discussions about PTSD, elucidating the condition's nature, and debunking misconceptions. 3) *VA/DOD Structure*: Overview of protocols, customs, and etiquette pertinent to interactions within these care systems. 4) *Military Culture & Communication*: Insights into elements such as weapons demonstrations, donning combat attire, and proficiency in military customs. 5) *Interviewing a Veteran*: Learners will acquire proficiency in conducting vet interviews. 6) *Final*: The culmination of this course involves an assessment in the form of a quiz and a self-reflective exercise.

Evaluation Plan: The evaluation plan for this intervention comprises four key components. First, a Qualtrics tracking form will be utilized to meticulously monitor all aspects of the elective, including session progression, attendance records, active participation in deliberate practice, and the timely completion of assignments. Second, an end-of-course survey will be administered to medical students to gauge their satisfaction with various components of the course. Third, to assess the acquisition of medical knowledge, a pre-course quiz will be conducted at the outset of session 1, and a final exam will be administered during session 6. Fourth, an evaluation of medical students' skills, encompassing both effectiveness and efficiency, will be conducted through direct observation as they engage in simulated veteran interviews. Additionally, medical students will play an integral role in evaluating the curriculum's potential integration into the M1/M2 years and its alignment with the "core competencies" essential for medical students. This comprehensive evaluation strategy will provide valuable insights into the intervention's effectiveness and inform potential improvements and future directions.

Potential Impact: Addressing the scarcity of veteran-focused medical training, this elective could serve as a blueprint for healthcare programs prioritizing improved healthcare for veterans and service members.

References:

- 1) Cronk T. First Lady Calls Joining Forces Effort a National Security Imperative. The U.S. Department of Defense. 2021
- 2) Olenick M, Flowers M, Diaz VJ. US veterans and their unique issues: enhancing health care professional awareness. *Advances in Medical Education and Practice*. 2015;6:635-639.
- 3) Koenig CJ, Maguen S, Monroy JD, Mayott L, Seal KH. Facilitating culture-centered communication between healthcare providers and veterans transitioning from military deployment to civilian life. *Patient Education and Counseling*. 2014;95:414-420.

Promoting Self-Directed Learning and Proactivity Among Medical Students Transitioning to Clerkships

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Problem Statement: Studies have identified that early clerkship students often struggle with understanding their new roles and shifting to self-regulated learning.

Rationale: When beginning clerkships, medical students transition from being at the center of the learning environment to becoming a member of the clinical team—with the patient and team now the focus. This creates a novel onus on students to guide their own learning and professional development. We aimed to create a workshop to improve student preparedness for self-regulated learning on clerkships. While various forms of transition-to-clerkship curricula exist across the country, innovations targeting self-regulated learning are scarce. Self-regulate learning is also a core competency defined by the LCME.[2]

Methods: We created a workshop for pre-clerkship students that addresses five pillars of self-directed learning, with the following objectives: 1) initiate discussions regarding expectation-setting with supervisors, 2) develop personal SMART goals to guide knowledge and skill development during clerkships, 3) ask and answer clinical questions that arise during clerkships, 4) utilize clinical downtime during clinical rotations, and 5) solicit and interpret targeted feedback. This mandatory workshop took place in groups of approximately 15 students, facilitated by their longitudinal faculty physician “coach.” We used a case-based approach to address each learning objective. Each case included a brief scenario, discussion questions and an associated small group exercise.

For example, after presenting a case of a student struggling to prepare for their upcoming surgery clerkship, we then asked students to explore the course website and SOM objectives for their first clerkship and develop two SMART goals.

Results: A total of 172 students participated in the workshop in December 2022. Seventy-four students completed both pre- and post-surveys (43%). We measured students’ perceptions regarding their (1) ability to engage in self-directed learning and (2) preparedness for clerkships using Hendry’s and Ginns’ Self-Directed Learning Readiness Scale.[3] Each item used a 5-point Likert scale (strongly disagree to strongly agree).

Example item: “I feel prepared to start a conversation with my resident or attending about their expectations of me at the start of a rotation.”

After the session, the proportion of students who felt they knew how to direct their own learning on clerkships increased from 45.5% to 86.5%. Comfort with starting a conversation about expectations increased from 15.8% to 46.0%. Understanding of how to utilize clinical downtime increased from 5.9% to 40.0%. Strong confidence in asking for targeted feedback increased from 7.9% to 42.0%. Formal ANOVA analyses are pending.

Potential Impact: Self-regulated learning is an essential skill for success on clerkships and residency training. A student's ability to adapt to and navigate the clinical environment also greatly impacts their clerkship evaluations and grade. Curricula targeting such skills is scarce. Thus, we aimed to operationalize and teach principles of self-directed learning.

References:

- 1) O'Brien, B., Cooke, M., & Irby, D. M. (2007). Perceptions and Attributions of Third-Year Student Struggles in Clerkships: Do Students and Clerkship Directors Agree?: *Academic Medicine*, 82(10), 970–978. <https://doi.org/10.1097/ACM.0b013e31814a4fd5>

- 2) Hill, M., Peters, M., Salvaggio, M., Vinnedge, J., & Darden, A. (2020). Implementation and evaluation of a self-directed learning activity for first- year medical students. *Medical Education Online*, 25(1), 1717780. <https://doi.org/10.1080/10872981.2020.1717780>
- 3) Hendry, G. D., & Ginns, P. (2009). Readiness for self-directed learning: Validation of a new scale with medical students. *Medical Teacher*, 31(10), 918–920. <https://doi.org/10.3109/01421590802520899>

Longitudinal Integration of Planetary Health into Brown University's Medical School Curriculum

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Idea: Development, implementation, and evaluation of a longitudinal planetary health curriculum for medical students

Need: The human population is healthier than ever before, but to achieve this we have exploited the planet's natural resources at an unprecedented rate. Climate change and continuing degradation of the environment threaten to reverse the health gains seen over the last century. To safeguard human health we need to maintain the health of the planet on which we depend. Traditionally, medical science is based on human systems within the human body. Planetary health broadens medical science to include the external systems that sustain or threaten human life (1). Higher education has been called to action for its 'unique positioning within societies worldwide, as respected sources of thought leadership, and as crucial stakeholders in development efforts' to address the planet's grand challenges (2). At present +80 medical schools participate in the Planetary Health Report Card Initiative (3). The mission of a new Planetary Health Curricular Integration Committee at Brown University's Warren Alpert Medical School is to promote, develop, and implement planetary health content throughout the medical school curriculum to empower students and faculty to act on issues pertaining to planetary health.

Methods: Development of a longitudinal planetary health curriculum has begun at Brown University's Warren Alpert Medical School with aspiration for implementation in 2024-2025. Several steps will be taken to ensure longitudinal inclusion of planetary health through this curriculum. 1) An introductory lecture on the foundation of planetary health will continue to be offered in the first year Health Systems Science course. 2) A planetary health pre-clerkship elective will continue with a new service learning component to allow students to engage with the local community on projects related to health and environment. 3) Case study and active learning based content will be developed and integrated into all systems and doctoring courses. 4) A planetary health scholarly concentration will be proposed as well as opportunities for clerkship fellowships.

Evaluation Plan: Student achievement of our overarching planetary health learning objectives will be evaluated through curriculum mapping, student assessment, and survey. A robust catalog of planetary health full courses, content developed for integration into doctoring/systems courses, and projects pursued through the scholarly concentration will be maintained and reported to the medical education curriculum committee. Student outcomes will be assessed in a variety of ways, depending on the course or project. Didactic lecture will assess learning through quiz/exam questions. Learning in the electives and the scholarly concentration will be assessed through active participation and projects.

Potential Impact: Clinicians have been called to act on planetary health (4). The question of how to best incorporate planetary health into medical school curricula is timely. Our longitudinal integration has the potential to serve as a model for other medical schools.

References:

- 1) Witmee, S. et al. 2015. Safeguarding human health in the Anthropocene epoch: report of The Rockefeller Foundation–Lancet Commission on planetary health. *The Lancet*, 386.
- 2) Guzman, C., et al. 2021. A framework to guide Planetary Health education. *The Lancet Planetary Health*, 5.
- 3) The Planetary Health Report Card: <https://phreportcard.org/>.

Veidis, E. et al. 2019. A call for clinicians to act on planetary health. *The Lancet*, 39

Improving Medical Education on Chronic Pain and Its Management

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Idea: Evaluate attitudes and beliefs of medical students about treating patients with chronic pain to improve medical education on chronic pain management.

Need: Chronic pain, defined as pain lasting for three or more months, affects over 50 million adults in the United States each year. Chronic pain has been associated with depression, increased risk of suicide, and substance use disorders. It is costly to the healthcare system, and limits patients' ability to tend to their activities of daily living and their overall productivity (1). Chronic pain is complex, arising from biological, psychological, and social factors, which makes its effective treatment challenging. While there are many options for pain management, opioid medications are one option that has received a lot of attention in the context of the opioid epidemic. Opioids pose a risk for addiction and overdose and are associated with a stigma that impacts the care of patients who are experiencing chronic pain (2). Due to the complexities of chronic pain management, medical students report discomfort and hesitancy around treating chronic pain patients (3). Therefore, we strongly believe there is room for improvement in how medical schools teach about this important topic.

Methods: To evaluate students' attitudes and beliefs regarding treating patients with chronic pain via various treatment modalities (including pharmacological, surgical, complementary and alternative treatments), we will utilize a survey we have developed based on other published data collection instruments. To determine how a clinical experience might affect students' attitudes, this survey will be administered in the fall of 2023 to students in their pre-clinical years, as well as students who have completed all core clinical rotations. We will also compare our data to those published by other institutions. In parallel, we will complete a review of the didactic curriculum pertaining to pain management to identify any potential gaps or missed opportunities.

Evaluation Plan: We will use multiple methods to evaluate the effectiveness of our didactic and clinical curriculum in preparing medical students to treat patients with chronic pain, and the impact of any potential curricular modifications implemented in response to our findings. In addition to the student survey, we will utilize an anonymous written self-reflection to assess students' perceptions about chronic pain. For a more in-depth assessment of students' comfort level and confidence in their ability to effectively and empathetically care for patients with chronic pain, we will conduct an interview with randomly selected students. Our long-term goal (next academic year) is to use the same data collection instruments to assess the impact of any curricular modifications that were implemented in response to the results from this study.

Potential Impact: This complex topic has the potential for lasting impacts on society, as evidenced for example by the opioid crisis. Medical curricula must effectively present a comprehensive and compassionate approach to treating patients with chronic pain, so that medical students graduate with confidence in their ability to treat patients with chronic pain.

References:

- 1) Rikard SM, Strahan AE, Schmit KM, Guy GP Jr.. Chronic Pain Among Adults — United States, 2019–2021. *MMWR Morb Mortal Wkly Rep* 2023;72:379–385. DOI: <http://dx.doi.org/10.15585/mmwr.mm7215a1>
- 2) Dowell D, Ragan KR, Jones CM, Baldwin GT, Chou R. CDC Clinical Practice Guideline for Prescribing Opioids for Pain — United States, 2022. *MMWR Recomm Rep* 2022;71(No. RR-3):1–95. DOI: <http://dx.doi.org/10.15585/mmwr.rr7103a1>
- 3) Tellier PP, Bélanger E, Rodríguez C, Ware MA, Posel N. Improving undergraduate medical education about pain assessment and management: a qualitative descriptive study of stakeholders' perceptions.

Getting the Whole Picture: A Clinical Reasoning Radiology Curriculum for Health Professions Students

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Problem Statement: Diagnostic imaging is a significant cause of diagnostic error.

Rationale: In the National Academy of Medicine report “Improving Diagnosis in Health Care,” diagnostic imaging and the clinician-radiologist interface were highlighted as key areas for improvement in the health professions. Errors in diagnostic imaging include not only the reading of the imaging, but how clinicians order testing and understand a radiologist’s interpretation (“meta-interpretation”)

Methods: In the pilot of this curriculum, third-year medical students went through a 90-minute, case-based clinical reasoning exercise held in July 2023 over Zoom. Each group had one facilitator (a senior student, resident, or faculty) and 4-6 students in a Zoom breakout room. Students went through ten cases across three categories- neuroimaging, thoracic imaging (shortness of breath), and abdominal imaging (abdominal pain). In each case, each group of students will be provided a problem representation of a clinical situation, make a differential diagnosis and decide what type of imaging to perform. After choosing the imaging, they will have to interpret the results and refine their differential before providing their answer and receiving faculty feedback. Each case and facilitator guide was developed by a medical student going into Radiology and a master clinician radiologist in that field. Incorporated into the facilitator guide are indications for certain studies (including American College of Radiology criteria) with their operator characteristics and risks in addition to top 10 pearls for ordering imaging in each respective field.

Results: Of the 90 students who participated, 54 students completed a survey of on the session. The average score was a 4.13 on a 1 (poor) to 5 (excellent) scale with 22 rating excellent, 20 very good, 9 good, 3 fair, and 1 poor. The 4.13 average was one of the highest ratings of clerkship classes for students. Positive feedback included students appreciating the clinical correlates to imaging ordering as past radiology sessions have been exclusively on reading imaging. The biggest constructive feedback was students wished the sessions were longer.

Potential Impact: This pilot of a curriculum related to clinical reasoning in diagnostic imaging effectively helped bolster the clinician-radiology interface. The curriculum can be used across different levels and professions of learners in the future.

References:

- 1) National Academies of Sciences, Engineering, and Medicine. (2016). Improving diagnosis in health care. National Academies Press.
- 2) Johnson K.M. (2020). Towards better meta-interpretation: improving the clinician's interpretation of the radiology report. *Diagnosis (Berl)*. 20:dx-2020-0081.
- 3) Parsons A.S., Wijesekera T.P., Rencic J.J. (2020). The Management Script: A Practical Tool for Teaching Management Reasoning. *Acad Med*. 95(8):1179-1185.

Introducing A-Team Med: Voice of the Asian American Experience

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Idea: A-Team Med aims to leverage the power of storytelling to empower the next generation of Asian Americans to reclaim and author their own narrative.

Need: The Asian American experience is often an overlooked one in society that is seen but not heard. For example, an NIH study found Asian Americans compose 20% of the permanent workforce, yet only 6% hold senior leadership positions. Additionally, the rise of Asian hate crimes following the COVID-19 pandemic, has perpetuated a series of violence and harmful stereotypes for all Asian Americans.

Asian Americans are not a monolith.

Now more than ever is it necessary for the diverse voices of the Asian American, Native Hawaiian, and Pacific Islander (AANHPI) community to be heard.

Thus, A-Team Med draws inspiration from narrative medicine and aims to encapsulate the unique power of storytelling. We believe that testimonies and open dialogue are at the core of A-Team Med's mission towards empowering the next generation of prospective Asian American medical students and youth towards embracing their voice, filling in the blank, and becoming the authors of their own story. A-Team Med's slogan is "A is for ___" Intentionally, left blank for individuals to fill-in their testimony of the Asian American experience, there are infinite words that begin with the letter A and we challenge you to fill in the blank. What does the A mean to you?

Methods: LEARN MORE: ateammed.com

A-Team Med targets all members of the AANHPI community, fostering inclusivity and representation across diverse backgrounds. The primary goal is to collect testimonies from Asian Americans regarding their experiences, allowing them to reclaim their narrative in a society that often perpetuates the Model Minority Myth and overlooks the lived Asian American experience. This process is encapsulated in A-Team Med's slogan, "A is for ___," where individuals fill in the blank, symbolizing the act of authoring their own stories.

The project is designed to span 12 months. To gather narratives, we aim to include in-person interviews conducted in various settings such as schools, clubs, and public interviews. Additionally, individuals can share their stories through accessible online surveys, expanding our reach and impact.

By utilizing diverse platforms, we aim to facilitate open and engaging discussions that encourage participants to share their personal experiences. We envision these interactions as opportunities for empowerment, personal growth, and community building.

This approach not only allows us to collect a diverse range of narratives but also enables us to conduct comprehensive research to identify trends and common themes within the stories. Ultimately, our project seeks to empower Asian Americans to become authors of their own narratives while also contributing to a better understanding of the diverse experiences within the AANHPI community.

Evaluation Plan: Through quantitative and qualitative evaluation, we aim to contribute to a broader understanding of the Asian American experience through the power of personal stories.

Quantitatively, we will analyze the language and phrases used by participants to complete the statement, "A is for ____," identifying the linguistic trends in word choice (e.g., connotation and denotation). This analysis aims to unveil evolving narratives within the Asian American community. Furthermore, we will gather demographic information, including age, educational background, and geographical region, to gain insights into the diversity of our participant pool. Additionally, we will conduct a rigorous content analysis to identify persistent stereotypes and trends within the submitted narratives.

Our qualitative analysis focuses on exploring the creative storytelling within individual testimonies, providing a vital platform for Asian Americans to authentically share their life experiences. In our assessment, we examine the narratives for their profound impact on both individuals and the broader community, their capacity to empower voices that are often marginalized, and their ability to challenge prevailing stereotypes.

Potential Impact: A-Team Med has the potential to amplify the underrepresented voices within the Asian American community and promote cultural sensitivity and empathy among future healthcare professionals. Beyond the conference, our initiative aims to spotlight representation and foster a greater understanding of the diverse Asian American experiences.

ateammed.com

References:

- 1) Choi AMK, Rustgi AK. Diversity in leadership at academic medical centers: addressing underrepresentation among asian american faculty. *JAMA*. 2021;326(7):605-606. doi:10.1001/jama.2021.12028
- 2) Shah NS, Kandula NR. Addressing asian american misrepresentation and underrepresentation in research. *Ethn Dis*. 2020;30(3):513-516. doi:10.18865/ed.30.3.513
- 3) Yang, David H et al. "Experiences with Racism Among Asian American Medical Students." *JAMA network open* vol. 6,9 e2333067. 5 Sep. 2023, doi:10.1001/jamanetworkopen.2023.33067

Unveiling the Legacy of Race-Based Medicine: Assessing Its Influence in Medical Education

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Problem Statement: Race-based medicine in medical education and practices falsely legitimizes race as a biological entity, leading to iatrogenic racial disparities.

Rationale: Race is a sociopolitical construct based on physical attributes, created to establish a hierarchical system of power. In medicine, false biological assumptions link race with genetic ancestry. Individuals in the same racial group lack a shared genetic heritage, refuting inherent genetic unity. Using race as a biological marker in medical diagnosis can compromise accurate assessments, contributing to health disparities. Medical practices and education have integrated race, known as “race-based medicine” (RBM). National healthcare organizations have called for measures to eliminate RBM through a “race-conscious” lens that identifies racism and structural injustice as the risk factor for disparities.

Responding to this call for change, the Ending Race-Based Medicine Task Force (ERBMTF) has been established at Wayne State University School of Medicine (WSUSOM). The ERBMTF's study aims to provide insights and assess the knowledge, perception, and personal encounters with RBM within WSUSOM.

Methods: This preliminary investigation employed a cross-sectional survey to address three key inquiries guiding the research. Targeting medical students, residents, fellows, and attending physicians at WSUSOM during the 2023–2024 academic year, the study aimed to assess understanding, experiences, and attitudes concerning Race-Based Medicine (RBM). The project's goal was to gauge the extent of RBM knowledge, encounters in medical practice and education, and attitudes toward its elimination from the curriculum. The survey, distributed anonymously through Qualtrics, collected responses over the course of one week. Statistical analysis, with a significance threshold set at $p < 0.05$, was employed to interpret the collected data using Microsoft Excel, ensuring robust insights into the perspectives of the WSUSOM medical community on RBM.

Results: Most participants believed that race should not be considered when diagnosing patients (58.3%) or as a risk factor (53.2%). A statistically significant number of participants (78.8%) agreed/strongly agreed with racism being a risk factor (p -value=0.027). A statistically significant number of participants were exposed to RBM during their medical education (p -value = 0.001) and encountered it in both their curriculum and broader societal context (p -value < 0.001).

Potential Impact: This study shows medical trainees and practitioners are aware of RBM, yet it persists in medical education despite their belief that it shouldn't be used clinically. Diverse dissemination platforms are crucial to enhance the generalizability and reproducibility of findings. Longitudinal research across multiple time points can minimize recall bias.

References:

- 1) Wright, J. L., Davis, W. S., Joseph, M. M., Ellison, A. M., Heard-Garris, N. J., Johnson, T. L., & AAP Board Committee on Equity. (2022). Eliminating race-based medicine. *Pediatrics*, 150(1), e2022057998.
- 2) Cerdeña, J. P., Plaisime, M. V., & Tsai, J. (2020). From race-based to race-conscious medicine: how anti-racist uprisings call us to act. *The Lancet*, 396(10257), 1125-1128.
- 3) Jivens, M., Okafor, I., & Beverly, E. A. (2022). Osteopathic medical students' understanding of race-based medicine. *Journal of Osteopathic Medicine*, 122(6), 277-287.

Breaking Language Barriers in Healthcare: Training Students to Use Interpreters

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Idea: Training medical students on in-person and telephone interpreter use prior to starting clinical rotations: effects on confidence and competency.

Need: Approximately 8.4% of people living in the United States have limited English proficiency (LEP), and in some areas of the country, this number is higher than 25%. LEP individuals primarily rely on ad-hoc or professional interpreters to access healthcare services. It is imperative that efforts are made to use professionally trained interpreters rather than relying on bilingual family members or medical personnel who are not professional interpreters. Compared to bilingual, untrained healthcare professionals, professional interpreters have more favorable healthcare outcomes. Training students early in their education will increase not only their own interpreter usage competency but also potentially prevent adverse patient outcomes. Proper usage of interpreters in a medical setting is relatively simple but often not intuitive for those who have never used interpreters. There is limited research on methods for training health science students in interpreter usage. Few studies have been conducted on methods for training medical students on phone interpreter usage. This gap is notable because phone interpretation is vital when interacting with patients who speak uncommon languages or for hospitals with limited in-person interpreters.

Methods: This will be an interventional study with a single study group composed of a group of pre-clinical medical students at the Renaissance School of Medicine at Stony Brook University. All participants will be asked to complete a pre-intervention survey, go through an interactive module that teaches concepts related to interpreter use (both in-person and telephone) and answer a post-intervention survey.

Previous papers have relied on a sample as small as 20 and found significance. We intend to have participation from about 50 students currently enrolled in Phase I medical education at the Renaissance School of Medicine at Stony Brook University. The anticipated pool is based off numbers previously documented in the literature, which should guarantee sufficient power. Participation will be voluntary. Subject participation will take up to an hour, including the pre-intervention survey, the intervention module, and the post-intervention survey. Follow-up will occur 6 months post-intervention where they will complete the same post-intervention survey. Recruitment began in August 2023, and the project end date will be late March 2024.

When a student signs the e-consent form, they will complete a pre-intervention survey and then be redirected to complete the interpreter training module on Bookmaker. The module consists of training slides, interactive questions, and two videos (one for in-person and one for a telephone interpreter training).

Evaluation Plan: Participants will complete a pre-intervention survey, a training module, a post-intervention survey, and then repeat the post-intervention survey after 6 months. The pre-intervention survey serves to understand their perception of interpreters and the best ways to utilize them. The post-intervention survey, completed right after the module, will assess how successful the module was at teaching proper usage of interpreters, as well as underscoring their importance. Lastly, by having them repeat this survey 6 months after completing the module, we will assess retention of the information, and whether it has been useful during clinical rotations, which they will have started by that point. Basic statistical analyses will be performed. In addition, for questions based on a Likert scale, the non-parametric Wilcoxon Signed-Rank Test will be used (e.g. confidence with skills). Chi-Square tests will be used to analyze categorical variables (e.g. prior interpreter use). For quantitative data, paired t-tests will be used if a sufficient n is achieved (>30). Otherwise, the non-parametric Wilcoxon Signed-Rank Test will be used. For overall group analyses, either the two-sample t-test or Wilcoxon Rank sum test will be used depending on the n.

Potential Impact: We aim to highlight the importance of introducing students to proper medical interpreter usage at an early stage in their training. We hope the results will increase acknowledgment of medical interpreters as a critical resource, and our training module can be utilized in more medical schools to improve interpreter usage and patient outcomes.

References:

- 1) Thompson, Darcy A et al. Caring for Patients With Limited English Proficiency: Are Residents Prepared to Use Medical Interpreters?. *Academic Medicine* 88(10):p 1485-1492, October 2013.
- 2) Lee, K. C., Winickoff, J. P., Kim, M. K., Campbell, E. G., Betancourt, J. R., Park, E. R., Maina, A. W., & Weissman, J. S. (2006). Resident Physicians' Use of Professional and Nonprofessional Interpreters: A National Survey. *JAMA*, 296(9), 1049.
- 3) Karliner, L. S., Jacobs, E. A., Chen, A. H., & Mutha, S. (2007). Do Professional Interpreters Improve Clinical Care for Patients with Limited English Proficiency? A Systematic Review of the Literature. *Health Services Research*, 42(2), 727–754.

Innovative Medical Education Initiatives: GetMedical's Impact and Recognition

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Idea: GetMedical, an educational platform created by dedicated medical professionals, aims to enhance medical education in schools.

Need: GetMedical employs a multifaceted approach, including in-person sessions, social media engagement, and comprehensive teaching series, while integrating simulation-based teaching into school curricula with a focus on real-world medical scenarios. The mission of GetMedical is to create a brand that demystifies intricate medical topics for the layperson, enabling them to grasp their own health and become knowledgeable advocates.

Methods: GetMedical's teaching methodology is distinct, yet it is grounded in robust educational practices. To assess the effectiveness of GetMedical's educational initiatives, a systematic assessment strategy has been implemented. This strategy includes pre- and post-assessment tests to quantify knowledge acquisition. Furthermore, extensive feedback mechanisms have been established to gather insights from participants regarding their experiences with GetMedical's educational programs.

Evaluation Plan: A diverse array of scientific methodologies were rigorously employed to assess GetMedical's teaching approach. To date, two simulation sessions have been conducted, during which pre- and post-assessment tests were administered to evaluate knowledge acquisition. These assessments revealed a significant improvement in understanding among participants. The feedback received from students, educators, and other stakeholders underscores the positive reception of GetMedical's innovative teaching methods and the meaningful integration of medical subjects into the school curriculum. Three months after the sessions, the same multiple-choice questions (MCQs) were administered, demonstrating that students retained information from the sessions. The results highlight the potential of GetMedical's approach in enhancing medical education outcomes. The integration of real-world scenarios into the curriculum facilitates a deeper comprehension of medical subjects, rendering the learning process more engaging and relevant. The positive feedback further substantiates the effectiveness of this approach, emphasizing the importance of innovative teaching methods in medical education.

Potential Impact: GetMedical's innovative approach to medical education, acknowledged by the NHS entrepreneurship program, exemplifies the positive impact of multifaceted educational strategies. GetMedical contributes to the advancement of medical education and inspires a new generation of well-informed and engaged learners.

References:

- 1) Delungahawatta T, Dunne SS, Hyde S, Halpenny L, McGrath D, O'Regan A, Dunne CP. Advances in e-learning in undergraduate clinical medicine: a systematic review. *BMC Med Educ.* 2022 Oct 7;22(1):711. doi: 10.1186/s12909-022-03773-1. PMID: 36207721; PMCID: PMC9540295.
- 2) Al-Elq AH. Simulation-based medical teaching and learning. *J Family Community Med.* 2010 Jan;17(1):35-40. doi: 10.4103/1319-1683.68787. PMID: 22022669; PMCID: PMC3195067.

Enhancing Medical Education Through Longitudinal Community Engagement: The Voices Program

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Idea: Transforming medical education by fostering longitudinal relationships between students and historically marginalized communities.

Need: Medical education curricula are becoming more and more packed and accelerated, and face continued competition for learner's time. However, it has become clear that society and medical education broadly can no longer focus solely on the biological determinants of health to the exclusion of the other determinants. This necessitates a culture-shift in medicine and the messages conveyed in the curricula of medical schools. To achieve this requires early, experiential, and immersive learning experiences for medical students. The Human Dimension Voices Program serves as a model for equity-centered, community-engaged curricula, preparing students to become physicians with knowledge of health systems science and the skills necessary to ultimately improve health outcomes and create health equity. The Voices Program bridges the gap between aspiring physicians and underserved communities, while addressing the pressing need for a deeper understanding of Social Determinants of Health (SDOH) by immersing students in the lives of community members. This initiative aims to enhance students' capacity to practice humanism in medicine, acknowledge the profound influence of life experiences on patient care, and reduce healthcare disparities.

Methods: In the Human Dimension course at HMSOM, medical students engage in various educational modalities and community-based assignments. One of these community-based experiences is the Human Dimension Voice Program (HDVP). The HDVP matches first year medical students with individuals (Voices Participants or VPs) from historically marginalized and under-resourced communities. These student-VP relationships are longitudinal, and involve regular home visits over the course of the program. At the same time, students receive education in health systems science, cultural humility, health inequity, and health coaching. They apply these concepts as they work with their VPs. Small group reflection activities led by clinical faculty are used to debrief experiences. Aligning with the maxim "the patient is our teacher; the community is our classroom", the HDVP program is designed to help students gain insight into an individual's experiences and identify barriers and assets as they relate to determinants of health. In 2023 we enhanced the curriculum to facilitate student-VP relationships and provide formal instruction on communication and health coaching skills. This comes in the form of a three-part framework for enhancing learning and equipping students to better assist their VPs: 1) gathering information about their VP's lived experience, 2) screening for and addressing determinants of health goals, and 3) assisting VPs in reaching their health and wellness goals.

Evaluation Plan: The Voices Program employs a combination of informal interviews by community liaisons (CLs) and structured assessments to gauge its effectiveness. Each group of students within the program benefits from the presence of CLs, who are employed to serve as essential bridges, fostering relationships and communication between students, Voices Program participants (VPs), and program leadership. These CLs maintain ongoing contact with VPs, in order to assess their impressions of the program, as well as gain insight on their relationships and interactions with students. For structured assessments, we utilize course evaluations to systematically gather and analyze qualitative feedback from students. To gain a more comprehensive understanding of the program's impact, we plan to conduct one or more focus groups with student participants following the completion of their first year in the program. This multifaceted approach ensures a thorough assessment of the Voices Program's effectiveness.

Potential Impact: The Voices Program equips future healthcare professionals with crucial interpersonal skills while addressing healthcare disparities. It can serve as a model for educators, and institutions

seeking to incorporate community engagement into their curricula, while advancing the values of humanism in medicine and promoting health equity.

References:

- 1) Doobay-Persaud A, Adler MD, Bartell TR, Sheneman NE, Martinez MD, Mangold KA, Smith P, Sheehan K M. Teaching the Social Determinants of Health in Undergraduate Medical Education: a Scoping Review. *J Gen Intern Med.* 2019 May;34(5):720-730. doi: 10.1007/s11606-019-04876-0. PMID: 30993619; PMCID: PM C6502919.

Building Empathy: Implementing Community Engagement in a Complex Care Medical Education Rotation

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Idea: Students in a pediatric Complex Care Acting Internship (AI) volunteered weekly at a community center for differently-abled individuals.

Need: It is widely recognized that physicians face challenges when it comes to effectively caring for individuals with disabilities. There exists a knowledge gap regarding the needs of differently-abled individuals primarily due to societal and medical unawareness of the experiences they face¹. The Sunshine Helpers is an interdisciplinary student-run organization dedicated to fostering interactions with differently-abled individuals in the Galveston community. The need for better care of this population motivated us to collaborate with UTMB to enhance the Complex Care Acting Internship. Previously, the internship lacked consistent exposure to people with disabilities. Exchanging a day of clinic time for a day of community outreach, this revision aims to bridge the communication gap by allowing fourth year medical students to cultivate a strong sense of empathy, provide companionship, and gain commitment to public service. Recognizing these challenges empowers students to advocate for ongoing community engagement with differently-abled individuals and provides them with early exposure that can contribute to their development as more compassionate and effective physicians.

Methods: Students enrolled in the complex care AI engage in a robust 4-week internship focusing on caring for patients with a variety of special health care needs. Weekly, AI students go to the Sunshine Center, a local establishment for people with varying levels of abilities to refine communication and life skills once they have aged out of attending public school services. On the second day of the internship, AI participants undergo an orientation at the Sunshine Center. During this orientation, students explore the Center's mission, gain insights into the daily activities of the staff and clients, and are paired with a buddy for the month. During the internship experience, participants engage in a variety of activities with their buddy, such as ceramics, gardening, arts/crafts, cooking, and board games. Students may elect to partner with clients that have similar interests or engage in the activities which best suit their specific skills. On the AI's last day at the Sunshine Center, students travel with the staff and their buddy on a field trip to a local community attraction. Here they volunteer with the staff to reinforce the joy and safety of clients attending the field trip.

Throughout the internship, students provide informal verbal feedback to the AI director regarding how the experience is going at the end of each week, with formal written feedback collected on the final day of the rotation about their experience and ways to improve it.

Evaluation Plan: Our current evaluation plan includes weekly student meetings with the AI course director to discuss progress towards individually set learning objectives, as well as inclusion of a reflective assignment following the completion of the Complex Care Acting Internship reviewing the experience, satisfaction, learning focus, and impacts of the experience. The assignment includes open-ended questions allowing the student to expand on any specific portions of the AI of particular educational benefit or areas requiring revision. Students then reflect on the use of a community-based experience within this AI and if they would recommend the experience of the Sunshine Center be included in the future.

These reflections are qualitatively analyzed for common themes, specifically for any common praises or areas of improvement with the purpose of evaluating the robustness of this community-based experience in helping students develop skills to care for people with developmental disabilities.

Potential Impact: Community-driven experiences are known to reinforce physicians' sense of purpose and provide more insight to social realities their patients face². Incorporating a community outreach component into a Complex Care AI allows students to interact with those with disabilities more intimately and can better shape their future care of these individuals.

References:

- 1) Lagu, T., Haywood, C., Reimold, K., Dejong, C., Sterling, R. W., & Iezzoni, L. I. (2022). 'I Am Not The Doctor For You': Physicians' Attitudes About Caring For People With Disabilities. *Health Affairs*, 41(10), 1387–1395. <https://doi.org/10.1377/hlthaff.2022.00475>
- 2) C, C., G, A., & NS, C. (2016). Enhancing Community Health by Improving Physician Participation. *Journal of Community Medicine & Health Education*, 06(05). <https://doi.org/10.4172/2161-0711.1000470>

Patient Guide for Understanding the Timeline of Radiotherapy for Locally Advanced Prostate Cancer

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Idea: To improve the comprehension of UCI prostate cancer radiation recipients regarding the steps to start radiation by creating an informational brochure.

Need: Before receiving radiation therapy for prostate cancer, most patients require placement of fiducials, spaceOAR, a repeat MRI, and CT scan for radiation design. However, patients undergoing this treatment often feel overwhelmed when discussing these steps during consultation with a radiation oncologist. This creates a gap in understanding fueled by the unfamiliarity with cancer and radiation-related terms (1). Radiation therapy requires multidisciplinary coordination in a complex timeline, beginning with consultation, imaging referral, simulation, treatment design, radiation delivery, and follow-up. Consequently, patients are underinformed about radiation indications, logistics, outcomes, and side effects, leading to poor recall following the pretreatment consultation, and causing interruptions to care (1,2). Education material on radiation oncology websites exceeds recommended NIH and AMA guidelines, thus those seeking health literacy online may not receive it (3). We address this by supplying an informative yet simple guide for the treatment plan to the patient at their initial radiation consultation. This aims to display the treatment timeline, set appropriate expectations, and allow for productive communication about treatment.

Methods: The intervention will take place with non-metastatic prostate cancer patients consented for radiation therapy at the University of California Medical Center who serve as the target learners. Patients will be screened at the time of initial radiation oncology consultation. If patients choose to participate, they will be informed that the intervention will teach them about the timeline of their radiation treatment plan. Participants will be given a Likert survey to assess their understanding, anxiety, and satisfaction before being given the brochure, with possible responses over a 5-point scale ranging from strongly disagree, disagree, neutral, agree, and strongly agree. The brochure will contain the entire treatment timeline, including appointment order, directions on preparation before each simulation and radiation appointment, visit expectations, and duration, and contact information for support. The brochures will be designed to be visually engaging and easy to understand, with opportunities for patients to write down questions and notes. Then an immediate 5-point Likert post-survey is given to patients to re-assess the impact of the brochure.

Evaluation Plan: We will track the participants' answers on their familiarity with their prostate radiation treatment timeline before they get the brochure as a baseline. Then, after they examine the brochure, a post-survey will be given to assess and evaluate their understanding of the treatment timeline using the easy-to-follow brochure. The long-term follow-up of the intervention is made based on patient understanding and adherence to treatment recommendations. The brochure will be considered effective if respondents are more compliant and adherent to their treatment timeline, for example: fewer missed appointments, and following pre-appointment directions. The end goal of the intervention is to improve patients' health literacy regarding their treatment plan and how to effectively prepare for each upcoming step in their radiation journey. Lastly, with the knowledge they get about the logistics of radiation, they will be more mentally and physically prepared before their simulation and radiation appointments and be better able to communicate any questions to their radiation oncologist. We aim to increase health literacy and improve treatment comprehension, adherence, and outcomes through clear communication of treatment timelines.

Potential Impact: With 288,000 new cases a year, prostate cancer is the most common malignancy in men in the US. With most cases being non-metastatic, men will require radiation therapy. Poor communication leads to delayed care and worse outcomes. This communication tool will enhance patient understanding, allow prompt radiotherapy, and reduce treatment anxiety.

References:

- 1) Chapman, Kristina et al. "Lay understanding of terms used in cancer consultations." *Psycho-oncology* vol. 12,6 (2003): 557-66. doi:10.1002/pon.673
- 2) Lomas, Derek J et al. "How informed is our consent? Patient awareness of radiation and radical prostatectomy complications." *Turkish journal of urology* vol. 45,3 191-195. 20 Dec. 2018, doi:10.5152/tud.2018.81522
- 3) Prabhu AV, Hansberry DR, Agarwal N, Clump DA, Heron DE. Radiation oncology and online patient education materials: Deviating from NIH and AMA recommendations. *Int J Radiat Oncol.* 2016;96:521-528.

Launching a Pioneering Value-Based Medicine Student Interest Group at a Brazilian Medical School

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Idea: Create the first Brazilian group exclusively dedicated to Value-Based Medicine discussions among medical students and trainees.

Need: Value-based medicine (VBM) aims to deliver cost-effective, evidence-based healthcare that incorporates patient values (1). Managing resources wisely and reducing low-value care have become urgent priorities for healthcare systems worldwide, driven by ethical, economic, patient safety, and quality of care imperatives. However, the conventional approach to medical education continues to emphasize thoroughness while discouraging restraint, a perspective reflected in examinations and clinical evaluations (2). Medical curricula often lack the necessary content to equip learners with the knowledge and skills to promote value-based healthcare (3). To address this challenge, two medical students and two faculty advisors from the Universidade Federal de Minas Gerais (UFMG) School of Medicine established the inaugural Brazilian Value-Based Medicine Student Interest Group (VBM SIG). A similar group at UC San Diego School of Medicine inspired our initiative. The two founding medical students serve as 2023 UFMG Choosing Wisely STARS representatives in Brazil. Our student interest group strives to foster a culture of cost-consciousness among students and trainees.

Methods: The program targets medical students, recent graduates, and residents, fostering an enriching exchange of ideas. It aims to provide a dedicated space for the discussion of value-based medicine and to empower medical students to drive positive change within their educational environments. Twenty-five medical students and two recent medical graduates compose the UFMG VBM SIG. The Value-Based Medicine Student Interest Group (VBM SIG) convenes for two-hour meetings twice a month. We offer online sessions through the Microsoft Teams platform and in-person gatherings at the Universidade Federal de Minas Gerais School of Medicine. Our meetings feature interactive guest lectures delivered by prominent physicians in value-based medicine. Throughout the year, our program covers a wide range of topics, including Introduction to Choosing Wisely and STARS (Students and Trainees Advocating for Resource Stewardship), the appropriate use and underuse of diagnostic tests, evidence-based medicine principles, value-based medicine concepts, rational use of antibiotics, bayesian reasoning in healthcare, and patient-centered care. These topics are explored during a series of ten meetings. Additionally, we encourage participants to delve into the American College of Physicians High-Value Care Curriculum modules for further study and discussion.

Evaluation Plan: Students participating in the VBM SIG are encouraged to attend a minimum of seven out of the ten two-hour sessions, with attendance tracked by student coordinators. Furthermore, we will employ the first three levels of Kirkpatrick's model to evaluate the program. Firstly, we will gauge participants' reactions and attitudes. This assessment will be conducted through a questionnaire featuring a 5-point Likert scale ranging from "strongly agree" to "strongly disagree." Students will provide feedback on their perceived knowledge related to the VBM topics covered during the year, their level of commitment, and their overall satisfaction with the group activities. Moving to the second level of Kirkpatrick's model, we will assess the learning aspect. Pre- and post-training assessments will measure students' proficiency in identifying low-value care and their ability to propose high-value care solutions. Finally, in the third level of the Kirkpatrick model, we will investigate whether the knowledge acquired during the program translates into behavior changes. Follow-up investigations will focus on evaluating changes in students' capacity to recognize low-value orders and prescriptions after they participated in the VBM SIG.

Potential Impact: To prepare future physicians for delivering high-value care, it is essential to provide opportunities for students to develop the knowledge, skills, and attitudes required for such practice. This

innovative student interest group may represent a viable approach to educating a new generation of cost-conscious physicians.

References:

- 1) Bae JM. Value-based medicine: concepts and application. *Epidemiol Health*. 2015;37:e2015014. doi:10.4178/epih/e2015014
- 2) Detsky AS, Verma AA. A New Model for Medical Education: Celebrating Restraint. *JAMA*. 2012;308(13):1329-1330. doi:10.1001/2012.jama.11869
- 3) Born KB, Moriates C, Valencia V, Kerssens M, Wong BM. Learners as Leaders: A Global Groundswell of Students Leading Choosing Wisely Initiatives in Medical Education. *Acad Med J Assoc Am Med Coll*. 2019;94(11):1699-1703. doi:10.1097/ACM.0000000000002868

Reactions and Reflections on Implicit Gender Bias Testing in Undergraduate Medical Educators

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Problem Statement: Implicit gender bias can influence how medical educators develop and deliver the curriculum.

Rationale: All individuals have implicit biases. A recent study demonstrated that K-12 teachers have implicit White/Black biases, which are reflected in their teaching (1). Medical educators are also likely to hold implicit biases that are reflected in their teaching and curriculum development. Discovering implicit biases is necessary to uncovering and correcting any biases that are inadvertently transmitted or reinforced to students. Examining implicit gender bias is crucial for achieving equity in academia and healthcare. Research has shown that administering and debriefing the Implicit Association Tests (IAT) can create a strong foundation for discussion on implicit bias (2). The purpose of this study is to describe reactions and gather reflections of undergraduate medical school faculty regarding their results on an implicit association test focused on science affinity and gender.

Methods: This pilot study was based upon a 2-hour interactive training workshop on implicit bias that was offered to all employees of Idaho College of Osteopathic Medicine. Attendance was optional but highly encouraged. All session participants were instructed to complete the Gender-Science Implicit Association Test (IAT) prior to attending the workshop. Study participants were recruited from workshop attendees with faculty appointments. At the end of the session, interested study participants were asked to complete a questionnaire with several demographic questions and the results of their Gender-Science IAT and if they were willing to participate in individual, structured interviews conducted by a licensed counselor. Interview questions prompted reflection on individual experiences in relation to student and professional interactions based on the gender identity. The interviews were then transcribed and analyzed for common themes and unique experiences using a phenomenological approach.

Results: 10 faculty completed the questionnaire and participated in individual, structured interviews. Qualitative analysis revealed that most participants do not perceive differences in their social interactions with students and colleagues of different genders. Males and females who were interviewed shared their personal experiences of gender bias. While most interviewees reported to believe they do not interact differently with students based on the student's gender, all acknowledged that gender bias exists and most agreed they have some gender bias. Finally, interviewees reported increased confidence in mitigating the influence of gender bias in their interactions with students in the future, based on the enhanced awareness they gained from the session. Future directions include exploring other types of implicit biases faculty may hold and expanding the sample size.

Potential Impact: After completing the implicit bias training session and Gender-Science IAT, faculty participants reported increased awareness of personal implicit gender bias and an increased confidence mitigating bias-influenced behavior during student and professional interactions.

References:

- 1) Chin, M., Quinn, D., Dhaliwal, T., & Lovison, V. (2020) Bias in the Air: A Nationwide Exploration of Teachers' Implicit Racial Attitudes, Aggregate Bias, and Student Outcomes. *Educational Researcher*. DOI: 10.3102/0013189x20937240
- 2) Sukhera, J., Wodzinski, M., Rehman, M. & Gonzalez, C. M. The Implicit Association Test in health professions education: A meta-narrative review. *Perspectives on Medical Education*. DOI: 10.1007/s40037-019-00533-8

Medical Student Interpreter Liaisons for Urban Medical School Student Run Clinics

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Idea: Creation of a Student Interpreter Network (SIN) to provide care in patients' preferred language at student clinics to improve satisfaction with care.

Need: In Detroit's urban setting of Wayne County, Michigan, the most commonly spoken languages after English are Arabic, Spanish and Bangla.1 Medical students at a large urban midwest medical school who run the Student Clinics in the community frequently encounter patients with limited English proficiency (LEP) who experience language barriers, which may lead to suboptimal care provided. Many of these clinics are non-profits and/or free clinics that do not have the financial or operational capacity to hire interpreters. The goal of the project is to determine the feasibility of using a student interpreter service for student-run free clinics at Wayne State University School of Medicine.

Methods: A sign-up form was distributed to the medical school student body to join the School of Medicine SIN. Data collected included name, contact information, language(s) spoken, and language proficiency. Language proficiency was collected via self report using the Interagency Language Roundtable (ILR) scale. Student run clinics voluntarily opted in to receive access to the SIN contact list. A pre-, interim, and post-survey will be distributed to clinics to assess feasibility and impact. The first half of the clinic surveys will collect data on general clinic information, languages spoken by patients, and language barriers. The second half will utilize Likert scales to assess need for interpreter services, potential patient care benefit from access to interpreter services, and potential for effective interpreter services by medical students. At the end of the patient's visit with a student interpreter, they will be asked to rate how helpful they found the use of interpreter services for their healthcare utilizing the smiley face Likert scale. Student leaders who run the clinic visits will also complete a survey utilizing Likert scales to assess student comfort serving patients, clinic workflow, and patient care when utilizing a student interpreter.

Evaluation Plan: Statistical analysis will compare pre-, interim, and post-intervention survey data to determine if student interpreters decrease language barriers and improve patient care satisfaction. Additionally, the analysis will evaluate whether this project creates more opportunities for students to participate in clinics. Patient's responses from the smiley face Likert scale will be analyzed to assess for patient satisfaction of care during their visit. Student leader surveys will also be analyzed to determine workflow efficacy, student comfort utilizing interpreter services, and quality of patient care. Analysis of qualitative feedback from the student-run free clinics and statistical analysis of survey data will provide information to improve future iterations of this project to meet the needs of students, clinics, and patients.

Potential Impact: Student-run clinics often encounter patients who would benefit from interpreter services. Continued expansion in the number of involved clinics will provide clinics with increased access to interpreter services. Students will have increased involvement in patient care with the hope that more patients in Detroit can receive healthcare.

References:

- 1) Michigan Department of State. (2020). Languages access task force: Municipality languages spoken. https://www.michigan.gov/-/media/Project/Websites/sos/32lawens/Languages_Spoken_in_MI_Sept__2020.pdf?rev=cca2bf18e1d64fcca8013aa26f9f3afe

The Unique Role of Poetry in Medical Education

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Idea: As one of the oldest and most complex human arts, poetry can facilitate the learning of educational materials for the audience.

Need: Combining literature with medical education plays a significant role in medical information retention and promoting empathy and encouraging thinking in young doctors. Poetry and prose can be integrated with different medical education courses (Wolters & Wijnen-Meijer, 2022).

Poetry and medical education: This article discusses the importance of entering poetry into medical education in different medical education courses. Poetry is one of humanity's oldest and most complex art forms, which can integrate the greatness of music, the semantic pleasures of language, and all the visual, psychological, and aesthetic pleasures (Cole, 2022). Poetry is the literary expression of feelings, thoughts, and opinions. Hence, before the poem's audience consider the literal meaning, the musical features of the poem are mixed with the human mind (Vaughan-Evans et al., 2016).

Methods: The author of this article wrote the following verses about some of the main complications after fractures and dislocations.

Fractures & dislocations
These have complications
So Come & pay attention
I would like to mention
One of them is called shock
Which is a reason for stroke
Another complication
That cause for obstruction
A syndrome is fat emboli
Lung & heart death, suddenly
Crash syndrome after fracture
Muscles & soft tissue with rupture

When a medical student is familiar with these poems during his studies, not only are these poems very effective in understanding the subject, but they remember this scientific and practical content for the rest of life. This makes them pay enough attention to the complications that may occur in the face of trauma patients and try to prevent them from occurring or deal with them properly if they occur. Increasing the involvement of humanities in medical education correlates with increased patient satisfaction, recovery, and care.

The inclusion of humanities in medical education, which is now very popular, is an effort to facilitate the awareness of the art of medicine, increasing compassion and empathy. For example, a training program based on the conceptual literature was implemented to study the topics of education and patient care more deeply.

Evaluation Plan: Teaching with poetry conveys a positive feeling and promotes empathy. In addition to its significant impact on the audience's mood to receive the material, this teaching style technically makes the teaching points stay in mind. The combination of medicine with art and literature will definitely have a good effect on medical students, therapists, and patients and is considered a unique educational

method. In fact, a compilation of educational poems focused on a specific medical topic can serve as a helpful and practical summary of that topic.

Potential Impact: Including humanities in medical education is a measure to increase medical art awareness, compassion, and empathy.

References:

- 1) Abdel-Halim, R. E. S. (2014). The role of Ibn Sina (Avicenna)'s medical poem in the transmission of medical knowledge to medieval Europe. *Urology Annals*, 6(1), 1. <https://doi.org/10.4103/0974-7796.127010> [Crossref] [PubMed], [Google Scholar]
- 2) Banerjee, P. (2010). Facets of writing medical poetry. *Clinical Medicine*, 10(3), 301. <https://doi.org/10.7861/clinmedicine.10-3-301> [Crossref] [Web of Science ®], [Google Scholar]
- 3) Brown, S. A. (2015). Creative expression of science through poetry and other media can enrich medical and science education. *Frontiers in Neurology*, 6, 3. [Crossref] [PubMed] [Web of Science ®], [Google Scholar]

Exploring the Potential of Dei Workshops in Addressing Racial Discordance in Medicine: Insights From

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Problem Statement: Racial discordance among healthcare providers remains a significant concern, leading to disparities in patient care, trust, and health outcomes.

Rationale: Patient-clinician racial discordance has proven to be a predictor of worse health outcomes for underrepresented groups (1). Demographic data from the Saturday Clinic for the Uninsured (SCU) showed racial discordance between patients and volunteers in those who identified as Black/African American (32% vs 13%) and those who identified as White (22% vs 53%). Studies have shown improving physician communication and providing bias training can help address these disparities (2-3). This project aimed to address this racial discordance by developing a cultural humility and implicit bias training for student volunteers.

Methods: Student managers (n=14) were provided a 1.5-hour training which included time to reflect on personal experiences and how it informs the care they provide patients. Medical student volunteers (n=83) were provided with an abbreviated (30-min) version of this training.

After the training, attendees filled out a reflection survey using a 5-point Likert scale, asking them to rate their understanding and confidence pre- and post- intervention. We received 12 pre- and 9 post-intervention surveys from student managers and 46 pre- and post-intervention surveys from medical student volunteers.

Results: Analysis showed average scores from pre-to post-intervention increased by 1.00 point for student managers and 0.24 points for medical student volunteers. Across all reflection questions, there was a statistically significant increase in confidence scores as a result of the training for both student groups.

Potential Impact: Our project indicates that engagement of student volunteers in cultural humility and implicit bias training, even when brief in duration, led to higher confidence scores regarding these topics. Future directions include developing longitudinal educational programming that incorporates strategies for advancing health equity in our patient population

References:

- 1) Shen, M. J., Peterson, E. A., Costas-Muñiz, R., Hernandez, M. H., Jewell, S., Matsoukas, K., & Bylund, C. L. (2018). The Effects of Race and Racial Concordance on Patient-Physician Communication: A Systematic Review of the Literature. *Journal of Racial and Ethnic Health Disparities*, 5(1), 117–140. <https://doi.org/10.1007/s40615-017-0350-4>
- 2) Burgess, D. J., Van Ryn, M., Dovidio, J. F., & Saha, S. (2007). Reducing Racial Bias Among Health Care Providers: Lessons from Social-Cognitive Psychology. *Journal of General Internal Medicine*, 22(6), 882–887. <https://doi.org/10.1007/s11606-007-0160-1>
- 3) Cooper, L. A., Roter, D. L., Carson, K. A., Beach, M. C., Sabin, J. A., Greenwald, A. G., & Inui, T. S. (2012). The Associations of Clinicians' Implicit Attitudes About Race With Medical Visit Communication and Patient Ratings of Interpersonal Care. *American Journal of Public Health*, 102(5), 979–987. <https://doi.org/10.2105/ajph.2011.300558>

Understanding the Needs of Uninsured Patient with Type 2 Diabetes at a Student-Led Free Clinic

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Problem Statement: In the US, uninsured patients lack access to crucial diabetes self-management education and support (DSMES) programs after their initial diagnosis.

Rationale: Currently, patients at the Saturday Clinic for the Uninsured do not have access to DSMES which demonstrates is a gap in the care our patients receive.

Providing culturally sensitive DSMES is needed to equip both future healthcare clinicians and patients with the necessary knowledge on diabetes care and proper management (2). In order to do develop this program, an understanding of the specific needs of patients with diabetes at SCU is required. This can be done through a needs assessment, which is considered an important first step in the development of DSMES programs (3).

The purpose of this project is to assess the self-reported diabetes management practices and identify areas where SCU patients need additional support or education. This information will be used develop comprehensive educator and patient DSMES curriculums that aim to address potential barriers to diabetes management that our patients face.

Methods: Patients diagnosed with type 2 diabetes were contacted via phone to complete the needs assessment. Open-ended questions were posed to patients, directly aligned with the objectives of this project. Responses provided by patients were transcribed verbatim and subsequently subjected to both qualitative and quantitative analysis methods.

Data Analysis:

- Quantitative Analysis: Descriptive statistical analysis was performed to identify patterns and trends within the collected data.
- Qualitative Analysis: Qualitative data, obtained from the open-ended responses, underwent thematic analysis to identify recurrent themes and insights.

Results: Demographic Profile of Participants. A total of 19 patients completed this needs assessment. The demographic characteristics of the participants included a diverse range of ages, genders, and racial and ethnic backgrounds, reflecting that of the patient population at SCU.

Quantitative analysis of the collected responses revealed several noteworthy findings:

- Diabetes Management Education: 53% of participants never received any form of diabetes counseling in the past.
- Education Needs: A significant proportion of participants, 89%, highlighted the need for more comprehensive education on diabetes self-management strategies.
- Self-Management Behaviors: Participants struggled with multiple diabetes self-management behaviors. 58% reported not planning their meals in advance; 26% reported leading a largely sedentary lifestyle. A significant proportion of participants, 89%, were unaware of what constituted low blood glucose, with 53% being unaware of what to do in the event of low blood glucose.

Thematic analysis of the qualitative responses yielded the following key themes:

- Challenges Faced: Participants consistently mentioned challenges related to managing their diabetes, including finances, medication access, and implementing lifestyle modifications.
- Desire for Education: Most participants expressed a strong desire for more educational resources and education on managing their condition effectively. All patients were very motivated to make lifestyle changes.

Potential Impact: The results of this needs assessment underscore the pressing needs and concerns of SCU patients diagnosed with type 2 diabetes. They highlight the importance of addressing access barriers, providing comprehensive educational resources, and enhancing support services to empower these patients in their diabetes self-management journey

References:

- 1) Center for Public Health Law Research. Health Insurance Coverage Laws for Diabetes Self-Management Education and Training. Policy Surveillance Program. Retrieved October 27, 2022, from <https://lawatlas.org/datasets/diabetes-self-management-education-laws>
- 2) Cornell, Susan, et al. The Art and Science of Diabetes Care and Education. Association of Diabetes Care & Education Specialists, 2021
- 3) Centers for Disease Control and Prevention. (2018, March 12). Advanced Search Diabetes Self-Management Education and Support (DSMES) Toolkit: Return on Investment. Centers for Disease Control and Prevention. <https://www.cdc.gov/diabetes/dsmes-toolkit/business-case/roi.html>

Visualizing Careers in Eye Care: A Workshop for Pre-Health UndergraduatesNguyen, Kent; Chang, Jessica
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Idea: Pre-health undergraduates will express greater interest in vision health careers after participating in a multi-station workshop.

Need: There is an increasing global prevalence of visual impairment from ocular diseases such as cataracts, glaucoma, and macular degeneration due to the growing and aging population (1). These aging patients will need more services from eye care providers in optometry and ophthalmology. However, the availability of eye care services will not be able to keep up with the strong demand due to projected decreases in eye care providers in the coming decades (2). In order to help reduce the strain from this demand, it is necessary to train more eye care providers, and the initial step is to attract more undergraduate students to careers in eye care. Early exposure for undergraduates to health care professions has been shown to increase their interest and intent to pursue careers in health care (3). To encourage undergraduates to pursue careers in eye care, students will be recruited through pre-health organizations, advisors, and courses on campus to participate in a one-day 4-hour interactive workshop at the USC Roski Eye Institute and given an information packet. Great workshops only need to meet two core criteria - to be fun and to have a key take home message. It is our intent for learners to engage, learn, and enjoy.

Methods: In 2024 an interactive workshop will be offered for up to twenty pre-health undergraduate students. The workshop will have three parts: 1) Who are we? 2) Learn more - choose your adventure in eye care. 3) What I learned and how interested am I?

Part one - 45 minutes - Who are we? Introduction to workshop and a panel of vision specialists share what they do.

Part Two - Three 45-minute segments - Choose your Adventure (each learner visits three of four "rooms" - total time 2 hours, 30 minutes, with snack stations and five minutes travel time between stations. As the professionals are leading each station, they will also share their experience working with patients and research in their fields. 1) Room 1 - A corneal specialist will demonstrate the EyeSI simulation instrument that gives students the experience to perform cataract surgery. 2) Room 2 - A retinal specialist will demonstrate how the Optos retinal imaging instrument is utilized to capture images of retinal diseases. Students will have the opportunity to image their own eyes on the Optos. 3) Room 3 - An optometrist will guide students in performing peer exams with slit lamp biomicroscopy and direct ophthalmoscopy. 4) Room 4 - An ophthalmology resident will guide students in dissecting preserved cow eyes.

Part Three - 45 minutes - 15 minute break, 30 minute conclusion - What I enjoyed the most - Questions, sharing of key takeaways anonymously, and completion of the workshop evaluation form.

Evaluation Plan: There are multiple elements to our program evaluation. 1) Assessment of our process and eye care information packet: We will compare our plan to the actual workshop to note any modifications. We will also query participants about the usefulness of the packet materials: a) Eye care careers and requirements; b) The four stations explaining who was there, what they do and what they demonstrated; and c) Future opportunities to take part at Roski as a student. We will also track attendance and choice of "adventures". 2) Reaction: The workshop survey will gather data about participant satisfaction, level of engagement in each section of the workshop, how they plan to use what they learned, and interest level in eye care careers. 3) Learning: A pre-workshop poll (using software such as Kahoot!) will gauge prior knowledge on eye topics. The workshop survey will allow participants to share what they learned. A retrospective pre-post questionnaire (embedded in the workshop survey) will be used to gain insight into interest in their own eye care, interest in learning more or engaging in opportunities at Roski, and interest in eye care as a career option.

Potential Impact: It is hoped that this workshop will inspire interest in eye care professions to better serve the eye care needs of our growing and aging population.

References:

- 1) Flaxman SR, Bourne RRA, Resnikoff S, et al. Global causes of blindness and distance vision impairment 1990-2020: a systematic review and meta-analysis. *Lancet Glob Health*. 2017;5(12):e1221-e1234.
- 2) Berkowitz ST, Finn AP, Parikh R, Kuriyan AE, Patel S. Ophthalmology Workforce Projections in the United States, 2020-2035 [published online ahead of print, 2023 Sep 20]. *Ophthalmology*. 2023;S0161-6420(23)00677-2.
- 3) Vakayil V, Chandrashekar M, Hedberg J, Bauman BD, Malik S, Yerxa D, Hendrickson LG, Kernahan P, Hadley ME, Harmon JV. An Undergraduate Surgery Interest Group: Introducing Premedical Students to the Practice of Surgery. *Adv Med Educ Pract*. 2020 May 13;11:339-349.

Using a Novel Narrative Medicine Curriculum to Teach Pediatric Residents About Racial Equity

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Idea: To teach pediatric residents and empower discussion about racism, racial bias, and racial justice with a novel narrative medicine curriculum.

Need: The study of narrative medicine posits that the practice of medicine is inherently story-based and that understanding and reflecting upon stories help physicians connect with their patients. It has been hypothesized that the study and practice of narrative medicine may increase empathy, mitigate burnout, and improve written and oral communication. More recently, narrative medicine has been proposed as a means to explore racism and bias. This novel curriculum seeks to use narrative medicine to teach pediatric residents about racism, racial bias, and racial justice and be more comfortable addressing these issues in their practices. Antiracist curricula have previously been proposed for pediatric residents (1). Furthermore, narrative medicine has been proposed as a means to teach about racial justice (2), though not specifically to residents. Narrative medicine has also been used in the pediatric resident population, however the focus of these studies have primarily been wellness, burnout mitigation, and self-reflection (3). Overall, there is a gap in the literature exploring the use of narrative medicine workshops to teach pediatric residents about racism, racial bias, and racial justice.

Methods: The target learners will be pediatric residents (PGY-1 through PGY-3) at a free standing children's hospital in Los Angeles, CA. The narrative medicine workshops will be structured as two 50-minute sessions approximately 6 months apart and will take place during the residency noon conference, at which all the pediatrics residents (n=110) are expected to attend. Each session will include a 10-minute didactic session about narrative medicine and close reading, a 20-minute exercise in close reading, a 5-minute free writing session, and a 10-minute period for discussion and reflection. The didactic sessions will specifically describe narrative medicine and its previous applications in wellness, burnout mitigation, and communication and will introduce concepts of racism and bias. The close reading texts will feature writers of color and will in some way discuss race or the lived experience of living in a racialized body. The period for discussion and reflection will be led and facilitated by a pediatrics resident trained in narrative medicine techniques. By the end of the 2 narrative medicine workshops, learners should be able to: (1) understand the concept of narrative medicine; (2) be comfortable performing close reading of a text; (3) be empowered to engage in conversations around racism and bias.

Evaluation Plan: At the beginning of the first session, all learners will be asked to complete the pre-workshop survey and create a unique identification number. This Likert scale online survey will ask learners to assess their own comfort with engaging in discussions about race and bias. After both sessions, learners will be asked to fill out a post-workshop survey. The post-workshop Likert scale survey will assess the change in participants' attitudes about these topics. It will also provide a free text section in which participants can provide feedback and reflections about the narrative medicine workshops. Their answers will be matched via a unique identification number. A paired t-test will be used to determine the significance between their pre- and post-workshop responses. A qualitative research approach will be utilized to code the free responses and one coder will assess the free response questions for themes that may not be captured in the Likert scale questions.

Potential Impact: The hope is that exploring the impacts of racism and racial bias through the lens of narrative medicine would be a viable way to discuss difficult topics that affect the daily lives of pediatric patients. Integrating these lessons into the residency curriculum may also be a feasible way to teach pediatric residents about these topics.

References:

- 1) Szoko, N., Ragunathan, B., Radovic, A., Garrison, J. L., & Torres, O. (2023). Antiracist Curriculum Implementation for Pediatric Residents. *Journal of Medical Education and Curricular Development*, 10, 23821205231162984. <https://doi.org/10.1177/23821205231162986>
- 2) Holdren, S., Iwai, Y., Lenze, N. R., Weil, A. B., & Randolph, A. M. (2022). A Novel Narrative Medicine Approach to DEI Training for Medical School Faculty. *Teaching and Learning in Medicine*, 1–10. <https://doi.org/10.1080/10401334.2022.2067165>
- 3) Wesley, T., Hamer, D., & Karam, G. (2018). Implementing a Narrative Medicine Curriculum During the Internship Year: An Internal Medicine Residency Program Experience. *The Permanente Journal*, 22. <https://doi.org/10.7812/TPP/17-187>

Improving Medical Literacy for College Age Women Surrounding HPV

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Idea: Assess the knowledge and attitudes of college women on HPV before and after a targeted intervention presented by a peer.

Need: It is expected that college age women have a high prevalence of HPV, yet most of them are not aware they ever had an infection. Knowledge about STI's differs across cultures and has tremendous diversity from state to state, this leaves some women at a disadvantage when it comes to protecting themselves as well as their sexual health. There is currently an upward trend that less and less people are staying up to date with their pap smears mostly because people do not know the importance of them or have the resources. A 2022 cross-sectional study that looked at villanova students found that many people believe myths surrounding HPV such as that it cannot be contracted via skin-to-skin, or that many didn't even know that it is an STI. Human Papillomavirus can cause numerous cancers including cervical, anal, vulvar, and more, yet there is not a test in the US for men to see if they have an active infection. Women need to have the medical literacy to know why pap-smears are important to be equipped to protect themselves.

Methods: 1. Administer a qualtrics survey to a group of women to better understand attitudes surrounding HPV as well as acquire an understanding of the knowledge levels of our sample
2. Present an educational intervention with the intention to educate college age women on HPV, its risks, the importance of pap-smears, and refute misinformation.
3. Administer a post survey to assess attitudes, knowledge change, and whether people plan on changing behavior
3. Follow up in 6 months and see if people did actually change their behavior and kept their attitudes following the intervention

Evaluation Plan: Using statistical analysis to further understand the biggest knowledge gaps and observe whether there was a statistically significant change in knowledge or attitudes post educational intervention to understand its effectiveness.

Potential Impact: Increase medical literacy of college age women and support further educational interventions. Also, to increase women's ability to protect themselves through knowledge.

References:

- 1) Goldfarb, J. A., & Comber, J. D. (2022). Human papillomavirus (HPV) infection and vaccination: A cross-sectional study of college students' knowledge, awareness, and attitudes in Villanova, PA. *Vaccine*: X, 10, 100141. <https://doi.org/10.1016/j.jvaxx.2022.100141>
- 2) Kellogg, C., Shu, J., Arroyo, A., Dinh, N. T., Wade, N., Sanchez, E., & Equils, O. (2019). A significant portion of college students are not aware of HPV disease and HPV vaccine recommendations. *Human vaccines & immunotherapeutics*, 15(7-8), 1760–1766. <https://doi.org/10.1080/21645515.2019.1627819>
- 3) August 1, 2023, et al. "Rate of Overdue Cervical Cancer Screening Is Increasing." National Cancer Institute, www.cancer.gov/news-events/cancer-currents-blog/2022/overdue-cervical-cancer-screening-increasing. Accessed 2 Oct. 2023.

Structural Competency in GME: The Human Dimension Model

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Idea: To bring our proven UME Structural Competency community-engaged education course to a diverse set of GME programs in our health network.

Need: Despite calls over the past twenty years by the Institute of Medicine, AMA, and the AAMC for training in structural competency as a method to address growing health inequities in the US, very few graduate medical education programs have established effective curricula to address these needs. The ACGME requires that "residents must demonstrate an awareness of and responsiveness to the larger context and system of health care, including the social determinants of health, as well as the ability to call effectively on other resources to provide optimal health care." Despite the fact that structural and social determinants of health have the greatest impact on health outcomes and health equity, there remains limited data on how to effectively and systematically integrate community-centered Health System Science into GME.

Methods: Our approach began with a series of HMSOM leadership roundtable discussions to identify guiding learning objectives and associated core competencies for adapting HD to the GME milieu. We interviewed Residency Program Directors who expressed interest in pilot participation via a network-side survey. These stakeholder interviews yielded more specific data on existing structural competency strengths and gaps and led to the creation of core didactic content, community experiences and scholarship framework. We adopted four foundational structural competency pillars: Health System Science, Cultural Humility, Physician Leadership and Humanism; and for each, we created a series of didactic and experiential components to be delivered to resident physicians over a two-year timeframe. Training sites include 10 programs of different specialties including pediatrics, family medicine, internal medicine, OBGYN, surgery and emergency medicine, serving a variety of underserved areas throughout the State of New Jersey.

Evaluation Plan: We continue to systematically monitor feedback from our pilot programs informing both continued evolution of the program as well as assessing its impact. We survey Program Directors, faculty and residents in our pilot GME programs which will inform expansion to all residency and fellowship programs across the HMH health system (17 hospitals). Additionally, we recognize the need to expand faculty development and sustainably develop local champions, at both residency programs and clinical sites. Our next efforts will include ongoing assessment of the outcomes of the program including impact on students as well as on community members and partners.

Potential Impact: Strengthening resident physician's knowledge, skills and attitudes in Structural Competency has the potential to dramatically shift workforce impact on the major determinants of health in the U.S. Our focus on leadership and advocacy highlights this priority.

References:

- 1) Strasser R, Worley P, Cristobal F, Marsh DC, Berry S, Strasser S, et al. Putting communities in the driver's seat: the realities of community-engaged medical education. *Acad Med J Assoc Am Med Coll.* 2015 Nov;90(11):1466–70.
- 2) Committee on Educating Health Professionals to Address the Social Determinants of Health, Board on Global Health, Institute of Medicine, National Academies of Sciences, Engineering, and Medicine. *A Framework for Educating Health Professionals to Address the Social Determinants of Health* [Internet]. Washington (DC): National Academies Press (US); 2016 [cited 2023 Jan 20]. Available from: <http://www.ncbi.nlm.nih.gov/books/NBK395983/>
- 3) Metz J, Hansen H. Structural competency: theorizing a new medical engagement with stigma and inequality. *Soc Sci Med.* 2014;103:126-133. doi:10.1016/j.socscimed.2013.06.032

Investigating the Adoption, Impact, and Perception of Large Language Models by Medical Students

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Idea: To examine the impact of LLMs' recent technological advancements on US medical students' perceptions, utilization, and adoption of AI technology.

Need: The introduction of AI into medical education marks a pivotal moment in healthcare's evolution. With the rapid ongoing technological advancements in Large Language Models (LLMs), it is imperative to grasp their impact on medical students. This research fulfills the need to evaluate how these innovations affect medical students' perceptions of their future roles, their utilization of AI in education, and the ethical considerations they hold. Moreover, as the pressure mounts on medical students to publish and generate meaningful output, we anticipate a growing reliance on generative LLMs like GPT to aid in essential tasks such as manuscript writing. This shift could profoundly influence the quantity and quality of work produced by medical students. By exploring these dimensions, we aim to better prepare future medical professionals to harness AI's potential benefits while navigating the associated challenges and ethical complexities. This research is crucial for aligning medical education with the swiftly evolving healthcare landscape.

Methods: Our research employs a mixed-method approach, incorporating both quantitative and qualitative elements. The study will utilize Qualtrics surveys administered primarily via email to medical students at Penn State College of Medicine. Participants have the freedom to respond to any number of questions as they see fit.

This research is intentionally designed without a predefined minimum number of participants for success. Given the descriptive nature of the study, it doesn't require a specific number of cases for explanatory power. We anticipate enrolling around 80-100 medical students over a duration of 1-2 months from submission.

Data analysis will encompass both qualitative and quantitative methods. Qualitative data will be analyzed using tools like NVIVO, while quantitative analysis will involve software such as R studio. Additionally, we will use Biorender software to generate schematics for visual representation of findings.

The target audience for this project encompasses medical school administration teams, faculty, staff, and, most importantly, medical students. The research aims to provide valuable insights that will inform and benefit these key individuals in medical education.

Evaluation Plan: We aim to assess the effects of artificial intelligence (AI) introduction in medical education since November 2022, primarily focusing on medical students' shifting perspectives and practical application of this transformative technology. Key objectives include: 1) Evaluating how AI's integration has reshaped students' views on healthcare delivery, medical specialties, and their evolving roles as future healthcare providers; 2) Gauging the depth and breadth of AI utilization in their academic and professional pursuits, spanning from diagnosis assistance to manuscript drafting; 3) Identifying perceived pros and cons of AI adoption within the classroom and eventual professional practice; and 4) Determining any pivotal changes in career aspirations, attitudes, and ethical stances in light of AI's growing mainstream presence, especially post the launch of OpenAI's ChatGPT. Core hypotheses posit that AI's immersion has redefined students' perception of its potential role in medicine, amplified its educational and professional use, influenced long-term career paths and specialty preferences, and sparked a nuanced ethical debate centered on AI-augmented healthcare.

Potential Impact: This study reveals AI's influence in medical education. By evaluating students' AI use, curricula can adapt for custom learning. It brings up ethical dilemmas: AI-research's authenticity and

validity. Moreover, AI might boost interprofessional teamwork, decreasing new skill needs. Our findings hope to address changing ethics and views in healthcare.

References:

- 1) Eysenbach G. The Role of ChatGPT, Generative Language Models, and Artificial Intelligence in Medical Education: A Conversation With ChatGPT and a Call for Papers. *JMIR Med Educ.* 2023 Mar 6;9:e46885. doi: 10.2196/46885.
- 2) Lee H. The rise of ChatGPT: Exploring its potential in medical education. *Anat Sci Educ.* 2023 Mar 14. doi: 10.1002/ase.2270. Online ahead of print.
- 3) Khan RA, Jawaid M, Khan AR, Sajjad M. ChatGPT - Reshaping medical education and clinical management. *Pak J Med Sci.* 2023 Mar-Apr;39(2):605-607. doi: 10.12669/pjms.39.2.7653.

Learning of the Physiology of the Autonomic Nervous System with Virtual Reality

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Idea: Use of immersive learning technology in the teaching of the physiology of the autonomic nervous system.

Need: The use of immersive learning technology tools such as virtual reality in medical education has been shown to be effective in student engagement and learning. Medical physiology is an intensive 10-week course at Kiran C. Patel College of Osteopathic Medicine that covers topics such as cellular physiology, an introduction to the organ system and integrative function. The autonomic nervous system is a system that tends to confuse students, from the anatomical similarities/differences between the subdivisions to receptor physiology of the subdivisions. In addition to summary tables, practice problems (largely adopted from classical medical physiology textbooks). Immersive Learning Technology is an innovative way of creating, displaying/visualizing, and interacting with applications, content and experiences in a way that stimulates our sensory organs. Therefore, leveraging the benefits of immersive learning experiences, we aimed to pilot the use of immersive learning technology (VR) in applying these concepts with the goal of assisting students in mastering the physiology of the autonomic nervous system before moving forward to other blocks that expect the students to have mastered the physiology of the autonomic nervous system.

Methods: First year Osteopathic medical students will engage in the use of immersive technology (Virtual Reality) for immersive learning skill experience in the virtual world environment. The students will interact in a 3-dimensional setting using Acadicus, an immersive virtual simulation platform and 3D Organon VR, an immersive anatomical platform. In this pilot immersive technology experiences, we 1) provide students with a case-based simulation allowing students to recognize the signs/symptoms and predict possible treatments based on the given case of a 5-year-old presenting with difficulty breathing. The student encounter a virtual patient in Acadicus VR for 30 minutes in collaboration and interaction with the professor and other students in the multiplayer environment to assess the patient and discuss possible treatment and antidote, 2) use 3D Organon VR with guidance from the professor, the students interact and trace the autonomic nervous system nerves to various organs for 20 minutes leveraging visual immersion in VR which allows the students to explore the autonomic nervous system in a realistic 3-dimensional environment. and finally, 3) instruct the students to answer several case-based problems that follow the immersive technology experience. The immersive learning experience activities last 50 minutes.

Evaluation Plan: There will be a total of 9-questions on the examination that will be assessing the knowledge and application of the autonomic nervous system. The average performance on the 9-questions will be evaluated in addition to comments regarding the immersive learning experience to be collected from the formal course evaluation. Anecdotal student feedback will be summarized and utilized to improve the experience for future students.

Potential Impact: Using immersive learning technology in the teaching of physiology will increase student engagement with the content and improve their understanding of fundamental processes regulating bodily functions. This in turn will improve their application of this information in future courses and in-practice.

References:

- 1) Kim HY, Kim EY. Effects of Medical Education Program Using Virtual Reality: A Systematic Review and Meta-Analysis. *Int J Environ Res Public Health*. 2023 Feb 22;20(5):3895. doi: 10.3390/ijerph20053895. PMID: 36900904; PMCID: PMC10001289.

- 2) Ma CW, Cheng PS, Chan YS, Tipoe GL. Virtual reality: a technology to promote active learning of physiology for students across multiple disciplines. *Adv Physiol Educ.* 2023 Sep 1;47(3):594-603. doi: 10.1152/advan.00172.2022. Epub 2023 Jun 29. PMID: 37382503.
- 3) Saab MM, Hegarty J, Murphy D, Landers M. Incorporating virtual reality in nurse education: A qualitative study of nursing students' perspectives. *Nurse Educ Today.* 2021 Oct;105:105045. doi: 10.1016/j.nedt.2021.105045. Epub 2021 Jul 2. PMID: 34245956.

Gpt-4 Performance on USMLE Step 1 Questions and Its Implications for Medical Education

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Problem Statement: The role of artificial intelligence in medical education is promising, yet its reliability for challenging licensing exam questions must be validated.

Rationale: Language Learning Models (LLM's) are currently being accessed by learners across all levels of academia, including medical education (1). The most popular engine is ChatGPT, which has previously demonstrated success in passing the USMLE Step 1 exam using its GPT3.5 engine (2). These LLM's are able to not only interpret questions stems and produce answers, but they are able to articulate their rationale efficiently. This ability to analyze and provide explanations allows it to be a potentially powerful tool in educating students on the content and strategies employed by the major medical licensing exams. The newest edition of ChatGPT, GPT4, promises to out-perform earlier models in both accuracy and quality of answers (3). However, before GPT4 can be reliably utilized in medical education, it is necessary to demonstrate its accuracy and consistency across the myriad of subjects and disciplines that are present on USMLE Step 1 exams.

Methods: The study utilized questions from the AMBOSS question bank, sourced through an active subscription. AMBOSS is a comprehensive learning platform tailored for the USMLE STEP 1 exam, offering a range of questions categorized by systems and disciplines. This research focused on extracting questions from 18 systems and 12 disciplines by employing AMBOSS's custom session interface. Similar systems and disciplines were combined, e.g., "Reproductive System" encompassed questions from various related domains.

For each system and discipline, 50 questions were randomly selected from the AMBOSS question bank. Systems and disciplines with fewer than 50 questions were excluded. Each set of questions underwent separate analysis, encompassing a total of $n = 1300$ questions, including repeats.

Authors input each question and answer into ChatGPT as separate conversations, each followed by deletion to prevent cumulative influence. Questions with images were excluded, while questions with text tables were included. Statistical analysis involved determining accuracy percentages for each domain and the cumulative set. Unpaired chi-squared tests compared domain accuracies, while student accuracy quartiles were analyzed using the same method to gauge ChatGPT's performance.

Results: A total of 1,300 questions were analyzed for the study. Of that sample, 800 were analyzed in regard to systems and 500 in regard to disciplines. ChatGPT answered 86% of the total questions accurately, well above the 70% benchmark for passing. There were no significant differences between the various systems [$\chi^2(15)=20.38$, $p=.158$] or disciplines [$\chi^2(9)=11.17$, $p=.265$]. When compared against students' answers to sample questions, GPT-4 had lower accuracy on questions that students struggled on and had higher accuracy on questions that students tended to get correct. Each quartile demonstrated a significant difference in ChatGPT accuracy when compared to each other [$\chi^2(3)=108.56$, $p<.001$]. Specifically, ChatGPT accuracy was significantly higher when comparing the higher student accuracy quartiles to the lower quartiles and similarly for each comparison thereafter ($p<.001$).

Potential Impact: LLMs like ChatGPT are poised to significantly impact education. In medical schools, GPT-4's ability to process vast data and provide instant interactive feedback is invaluable, aiding students preparing for vital exams. This research highlights GPT-4's success in mastering STEP 1 and maintaining consistency across diverse subjects and disciplines.

References:

- 1) Kung TH, Cheatham M, Medenilla A, et al. Performance of ChatGPT on USMLE: Potential for AI-assisted medical education using large language models. PLOS Digit Health. Feb 2023;2(2):e0000198. doi:10.1371/journal.pdig.0000198
- 2) Bommasani R, Liang P, Lee T. Language Models are Changing AI. We Need to Understand Them. Stanford University, Human-Centered Artificial Intelligence; 2022. <https://hai.stanford.edu/news/language-models-are-changing-ai-we-need-understand-them>
- 3) GPT-4. OpenAI; 2023. <https://openai.com/research/gpt-4>

An Interactive Role Play-Video Resource for Pathology Learning to Emphasize Its Clinical Relevance

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Idea: Creating an interactive online repository featuring recorded doctor-patient plays where learners apply their Pathology knowledge to diagnose diseases.

Need: Pathology, a foundational medical science centered on diseases, is typically introduced early in medical school, emphasizing theoretical basics. However, the limited clinical integration during pre-clerkship years diminishes student motivation and their ability to grasp critical pathology concepts crucial for real-world medical practice. Preclinical students lack interactive online role-play resources tailored to pathology education. This project aims to address this gap by developing, implementing, and assessing such a resource. Importantly, this initiative aligns with the principles of authentic assessment. By immersing students in doctor-patient scenarios where they must apply pathology knowledge to diagnose diseases, it promotes a more genuine evaluation of their skills and understanding. This approach ensures that assessment is not limited to theoretical knowledge but also measures their practical abilities, mirroring the demands of real medical practice. This project contributes not only to enhanced medical education but also to the cultivation of healthcare professionals better equipped for authentic clinical scenarios.

Methods: This project is designed for preclinical undergraduate pathology students and spans two years, comprising a preparatory phase and an implementation and evaluation phase. Its core aim is to enhance students' comprehension of clinically relevant pathology concepts while boosting students' engagement and motivation. At its heart, the project features interactive videos that challenge students to diagnose diseases through a "guess the disease" approach. In the Preparation phase, a specific pathology learning module will be selected that covers multiple diseases, for which a dedicated video will be created. Students will be prompted to work through differential, provisional, and definitive diagnoses for the cases presented. The scripts for doctor-patient interactions, complete with investigation results, will be meticulously crafted by a pathology instructor. To ensure accuracy, these scripts will undergo rigorous evaluation by another experienced pathologist or clinician. Both students and volunteer instructors will take on acting roles in these videos. To facilitate interactivity, we will utilize a suitable platform like EdPuzzle. This platform will embed carefully crafted questions within the videos to encourage active engagement. During the Implementation phase, following each pathology lecture, students will be prompted to review one video and respond to its associated questions. This endeavor aims to better prepare students for their future roles as healthcare professionals.

Evaluation Plan: Program evaluation will be conducted through a comprehensive mixed-method study involving preclinical medical students from a single module at Helwan University's Faculty of Medicine in Egypt, with an expected sample size of 400 students. To assess the perceptions and utility of the learning resource from both end users (students and faculty), a multi-pronged approach will be employed. This will encompass a quantitative survey to gather structured data, supplemented by in-depth interviews and focused group discussions for a deeper understanding of their perspectives. To gauge the impact on student performance, a quasi-experimental design will be implemented. This design will involve administering pre and posttests for each pathology topic both before and after students have engaged with the video resource. This method allows for a systematic assessment of knowledge acquisition and retention because of utilizing interactive videos.

Potential Impact: This project enhances medical education, fostering clinicopathological skills, motivation, and competence. It aligns with authentic assessment principles and supports healthcare reform.

References:

- 1) Church FC. Active Learning: Basic Science Workshops, Clinical Science Cases, and Medical Role-Playing in an Undergraduate Biology Course. *Education Sciences*. 2021; 11(8):370. <https://doi.org/10.3390/educsci11080370>
- 2) Mbiydzonyuy NE, Chisompola NK. Basic Medical Sciences in Medical Education: a Thought for African Medical Schools. *Medical Science Educator*. 2021; 31: 253–256. <https://doi.org/10.1007/s40670-020-01145-2>
- 3) Elkhamisy FAA, Sharif AF. An innovative pathology e-course; incorporating interactive multi-instructional designs. *Medical Education*. 2023; 57(2): 187- 188. <https://doi.org/10.1111/medu.14982>

E-Learning in Clinical Settings: Blended Teaching Activity of Fetal Monitor to Obstetrics Registrars

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Idea: Blended teaching activity about fetal monitor (IEFM) for clinically overloaded obstetrics registrars to update their knowledge and skills periodically.

Need: IEFM is a procedure in which an instrument is used to continuously record the fetal heartbeats and the contraction of the mother's uterus during labour. IEFM is intended for early detection and management of fetal hypoxia which may lead to neonatal death or neurological damage. The obstetric registrar should be well acknowledged and trained in how to obtain, interpret, and manage the labouring women according to the results of IEFM. The registrar found it challenging to make time to attend the in-person IEFM workshop due to their clinical loads. Furthermore, intrapartum EFM is a dynamic everyday practice with each fetal monitor trace finding and subsequent care being unique. The electronic platform may be simply updated and altered to accommodate the new clinical scenarios.

Methods: A hybrid teaching module of online and face-to-face compartments is designed for obstetrics registrars during their rounds in the labour ward. The activity lasts for 3 weeks and will be run three times a year. The aim of this teaching activity is the comprehensive understanding of the fundamental characteristics of the intrapartum electronic fetal monitor and the competent application of a management plan for safe fetal and mother outcomes. Each week is composed of asynchronous and synchronous learning activities. The asynchronous part is in the form of online educational resources, instruction to learning activity, workplace formative assignments, and peer, and senior feedback. In the formative assignment, the learner obtains fetal monitor trace during the workday in the labour ward, check trace quality, review with peers and seniors, analyse the findings, sets a provisional diagnosis of maternal and fetal status, and finally compare these findings with maternal and fetal outcomes after delivery. These clinical scenario findings will be discussed among the learners in the weekly Zoom meeting. A weekly 1-hour Zoom meeting is used for the synchronous study during which each learner shares the screen and presents the formative assignment that was prepared during the week. Learners are given the chance to give and receive feedback.

Evaluation Plan: A Kirkpatrick evaluation model is employed for this module. The weekly Zoom meeting is used to discuss learners' feedback regarding course material, instructions, and workplace environment. Upon completion of the module, they complete surveys to assess the same items. The acquired knowledge, skills, and attitude are assessed during the weekly formative assignment and through peer and senior feedback given in the labour ward during their clinical practice. The application of the acquired learning is assessed during the workplace-based assessments in a real patient care context. A summative assessment is prepared and held by the obstetric department in the form of a written exam and OSCE stations, in addition to reviewing learners' logbooks to demonstrate the attainment of the intended learning outcomes.

Potential Impact: The availability of such a blended learning module will allow obstetric registrars to update and assess their knowledge according to their flexible time frame. The online part is simply updated and altered to accommodate new clinical scenarios and exchange experiences of a variety of emergent problems.

References:

- 1) Ellaway, R. and Masters, K. (2008). AMEE Guide 32: e-Learning in medical education Part 1: Learning, teaching and assessment. *Medical Teacher*, 30(5), pp.455–473
- 2) Laurillard, D. (2002). *Rethinking University Teaching : a conversational framework for the effective use of learning technologies*. New York: RoutledgeFalmer. Lave, J. and Wenger, E. (1991). *Situated learning : Legitimate Peripheral Participation*. Cambridge: Cambridge University Press

- 3) Salmon, G. (2021). Captivating Learning: Storyboarding – OEB Insights. [online] OEB insights. Available at: <https://oeb.global/oeb-insights/captivating-learningstoryboarding/> [Accessed 5 Mar. 2022].

Artificial Intelligence in MedEd: An Assessment of Chatgpt-4 Performance on Clinical Shelf Questions

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Problem Statement: The utility of artificial intelligence in medical education has been a discussion which warrants investigation prior to establishing recommendations.

Rationale: Artificial intelligence (AI) has been proposed as a study companion that can provide individualized learning experiences to medical students (1). OpenAI's ChatGPT is currently the most popular AI software that is being studied (2). This concept resulted from the success of ChatGPT in passing USMLE examinations with high percentiles (3). However, the full spectrum of its capabilities and limitations have not been explored. For instance, it becomes imperative to investigate the software's performance on the various specialty domains presented within medical school exams as means to fully understand its utility as a study resource. In this study, we present a comprehensive analysis of ChatGPT-4's performance on clinical shelf exam questions to understand the strengths and weaknesses of the model and better recommend its use as a study tool at its current stage of development.

Methods: The AMBOSS database was utilized to obtain study questions for this study. We extracted questions from the "Clinical Shelf Exam" selection and categorized questions by toggling the specific shelf exam filters. The nine different shelf exam specialties that are offered were considered. This included the specialties of Internal Medicine, Surgery, Pediatrics, Obstetrics & Gynecology, Neurology, Psychiatry, Family Medicine, Emergency Medicine, and Ambulatory Medicine. For each specialty, we randomly selected 100 questions for a total of 900 questions. Each question, along with its provided multiple choice answer options, were individually inputted into the ChatGPT-4 interface. The output was assessed for accuracy by comparing to the correct answer choice provided by AMBOSS. Additional variables that were noted included the number of multiple choice options provided by each question and also the percentage of students that correctly answered the given question. Accuracy percentages for each specialty and for the total question set were determined. Any difference in accuracy across specialties were assessed by unpaired chi-square tests. Additional unpaired chi-square tests were then conducted to compare the accuracy of individual specialties to one another. The mean accuracy for student performance was determined for each specialty and for the total question set. Furthermore, accuracy was compared to the amount of multiple choice questions available using unpaired chi-square tests.

Results: ChatGPT-4 answered 89% of the total questions accurately. There was a significant difference of accuracy among specialties [$\chi^2(8)=18.64$, $p=.017$]. Specifically, the accuracy of pediatrics questions were significantly less than psychiatry ($p=.004$), obstetrics and gynecology ($p=.009$), and neurology ($p=.019$). Emergency medicine was also significantly lower than psychiatry ($p=.007$), obstetrics and gynecology ($p=.015$), and neurology ($p=.030$). Family medicine was significantly lower than obstetrics and gynecology ($p=.038$), and psychiatry ($p=.018$). Accuracy did not have any significant differences between various amounts of multiple choice options available [$\chi^2(8)=12.89$, $p=.116$].

Potential Impact: ChatGPT-4 shows variable accuracy across medical specialties, suggesting domain-specific strengths. These findings highlight the need for diverse, specialty-specific training data and furthermore serves as a caution to medical students and educators who plan to use ChatGPT-4 to prepare for shelf exams and USMLE Step 2.

References:

- 1) Lee H. The rise of ChatGPT: Exploring its potential in medical education. *Anat Sci Educ*. Mar 14 2023;doi:10.1002/ase.2270

- 2) Ray PP. ChatGPT: A comprehensive review on background, applications, key challenges, bias, ethics, limitations and future scope. *Internet of Things and Cyber-Physical Systems*. 2023;3:121-154. doi:10.1016/j.iotcps.2023.04.003.
- 3) Gilson A, Safranek CW, Huang T, et al. How Does ChatGPT Perform on the United States Medical Licensing Examination? The Implications of Large Language Models for Medical Education and Knowledge Assessment. *JMIR Med Educ*. Feb 8 2023;9:e45312. doi:10.2196/45312

AI and the Future of Medical Education

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Idea: In an era marked by rapid advancements in technology, the integration of AI into medical education has emerged as a pivotal topic of discussion.

Need: There is a need to explore the implications and opportunities that AI presents for the future of medical education on a national and international scale. As healthcare evolves, so too must the way we prepare the next generation of physicians, nurses, and healthcare professionals. Harnessing the power of AI in medical education has the potential to enhance curriculum delivery, optimize clinical training, and ensure that our healthcare workforce is equipped with the latest knowledge and skills required to provide the best patient care. With the ongoing global healthcare challenges, the timely adoption of AI in medical education is essential for maintaining the quality and sustainability of healthcare systems worldwide. This presentation will delve into innovative AI-driven strategies, their impact on medical education, and the path forward for ensuring that our healthcare professionals are not only well-prepared but also at the forefront of technological advancements in healthcare delivery.

Methods: 1. Define key concepts related to artificial intelligence (AI) in the context of medical education, including machine learning, natural language processing, and deep learning along with the current applications of AI in healthcare and its potential impact on medical practice and education.

2. Compare and contrast traditional medical education methods with AI-enhanced approaches, highlighting the advantages and limitations of each.

3. Design a hypothetical AI-driven module or tool for medical education, outlining its objectives, content, and assessment methods.

4. Evaluate and critique existing AI-powered medical education platforms or tools, considering their effectiveness in enhancing learning outcomes and addressing the needs of diverse learners.

Evaluation Plan: Learners will evaluate comfort levels around AI topics pre and post presentation.

Potential Impact: Presentation on real-world applications of AI in medical education, including AI-driven learning platforms and virtual patient simulations (knowledge and application objectives).

Showcase examples of AI-powered tools or modules.

Divide the audience into small groups and provide them with a medical education scenario to have take-aways back home.

References:

- 1) Ayers JW, Poliak A, Dredze M, et al. Comparing physician and artificial intelligence Chatbot responses to patient questions posted to a public social media forum. *JAMA Intern Med.* 2023;183(6):589-596. doi:10.1001/jamainternmed.2023.1838
- 2) Frommeyer TC, Fursmidt RM, Gilbert MM, Bett ES. The desire of medical students to integrate artificial intelligence into medical education: an opinion article. *Front Digit Health.* 2022;4:831123. doi:10.3389/fgth.2022.831123
- 3) Shankar, PR. Artificial intelligence in health professions education. *Arch Med Health Sciences.* 2022;10(2): 256-261. doi:10.4103/amhs.amhs_234_22

A Pilot RCT Exploring the Impact of Patient Centered Videos in Undergraduate Medical Education

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Problem Statement: While there is some evidence that patient centered videos improve medical students' empathy and clinical skills, most research is poor quality.

Rationale: Multimedia resources, including videos, are recognised to boost educational outcomes amongst undergraduate medical students. Specifically, videos documenting patients' experience of disease and treatment have been found to increase patient empathy and clinical skills amongst medical students (1,2). However, previous evidence has typically been of poor quality. Here, we piloted the use of a Randomised Control Trial methodology to explore the impact of patient experience videos amongst a cohort of Graduate-Entry medical students at the University of Oxford.

Methods: We performed a crossover randomised control trial in a sample of sixteen first year, graduate-entry medical students at Oxford University to explore the impact of patient-centred videos in undergraduate medical education. Participants were randomised into two groups. Those in the intervention arm received a clinical teaching session which included a patient-centred video whilst those in the control arm received teaching on the same topic without a video. Immediately following, the groups then swapped, and each received a second teaching session on a different clinical topic. Measures of critical thinking, clinical understanding, empathy towards patients, and satisfaction with the teaching session were assessed using structured questionnaires immediately following each session. Significant differences between control and intervention arms were assessed using paired t-tests.

Results: Three participants were excluded from analysis due to missing data. Further, due to investigator error, measures of patient empathy could not be successfully analysed. Paired t-tests identified significantly greater improvements in critical engagement, student confidence, and higher student enjoyment following those teaching sessions including a patient video when compared with control sessions. However, following the application of a Bonferroni correction to account for multiple comparisons, only student enjoyment differed significantly between groups.

Potential Impact: This work demonstrated the feasibility of a Randomised Control Trial methodology to explore the impact of patient videos in medical student education, and indicated these videos' use might significantly benefit various educational outcomes. These findings have encouraged the performance of a full trial exploring these videos' impact this year.

References:

- 1) Sweeney K, Baker P. Promoting empathy using video-based teaching. *Clin Teach*. 2018 Aug;15(4):336-340. doi: 10.1111/tct.12693. Epub 2017 Aug 14. PMID: 28805316.
- 2) Hansen JR, Gefke M, Hemmingsen R, Fog-Petersen C, Høegh EB, Wang A, Arnfred SM. E-Library of Authentic Patient Videos Improves Medical Students' Mental Status Examination. *Acad Psychiatry*. 2020 Apr;44(2):192-195. doi: 10.1007/s40596-019-01130-x. Epub 2019 Nov 13. PMID: 31722086; PMCID: PMC7078136.

Bridging the Gap: Enhancing Digital Neurological Patient Communications

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Idea: To assess the impact of Artificial Intelligence on enhancing American Association of Neurological Surgeons' patient material readability.

Need: Patient education materials in neurology frequently surpass the readability levels recommended by the American Medical Association (AMA) and the National Institutes of Health (NIH). These organizations suggest that patient materials should be written at a sixth to eighth-grade reading level to ensure optimal comprehension for the general public. However, analysis has revealed that many patient materials provided by the American Association of Neurological Surgeons (AANS) are written at a level considerably higher than what is recommended. This discrepancy presents a significant barrier to effective patient-provider communication and patient comprehension, potentially leading to suboptimal medical decision-making. To address this issue, we are utilizing Artificial Intelligence, specifically Chat GPT 3.5, to streamline and simplify these documents, making them more comprehensible to patients. This initiative seeks to empower patients with a better understanding of their conditions, treatment choices, and post-operative care. This initiative is not only to improve readability but also to bridge the gap in medical health literacy and reinforce the importance of accessible patient education in the field of neurological surgery.

Methods: We adopted a comprehensive approach of quantitative and qualitative methods to assess the impact of Artificial Intelligence, particularly Chat GPT 3.5, on enhancing the readability of patient handouts. Our target audience comprises patients seeking neurosurgical care and their families, a group often confronted with complex medical information. Our primary objective is to increase medical health literacy by providing patient handouts that facilitate improved communication between patients and healthcare providers while ensuring accessibility. To achieve this, various patient handouts were selected from the AANS covering topics on neurosurgical conditions, treatment options, and post-operative care instructions. Our intervention spans a defined period during which Chat GPT generates simplified versions of these handouts. Simultaneously, we conducted comprehensive training sessions for healthcare providers to ensure their proficiency in using AI-generated materials effectively. A critical aspect of our methodology is the integration of the Flesch-Kincaid readability score assessment. This standardized metric enables precise evaluation of the reading levels at which patient information is currently written. By comparing initial readability scores with scores achieved post-simplification by AI, we quantitatively measure the project's impact on improving document clarity.

Evaluation Plan: Our program evaluation plan employs a multifaceted approach to assess its effectiveness. We will analyze Flesch-Kincaid Scores to quantitatively measure the impact of AI-driven simplification on the readability of patient handouts. Additionally, user surveys administered to patients and healthcare providers will provide valuable insights into usability, comprehension, and satisfaction. Healthcare providers' feedback sessions will offer perspectives on clinical relevance and patient interactions. Actively involving patients in feedback sessions ensures that their unique comprehension needs are addressed. The assessment surveys changes in patient knowledge, informed decision-making, and treatment plan adherence to evaluate the program's influence on patient outcomes and healthcare quality. This holistic evaluation approach will optimize patient handouts for readability, usability, and positive health outcomes and guide ongoing improvements.

Potential Impact: By enhancing patient comprehension and engagement, healthcare providers can expect better outcomes, higher patient satisfaction, and the advancement of shared-decision making. It also underscores the value of AI in healthcare, demonstrating how technology can streamline the recovery process and improve health literacy.

References:

- 1) American Association of Neurological Surgeons (AANS). (2023, October 8). Neurosurgical Conditions and Treatments. <https://www.aans.org/en/Patients/Neurosurgical-Conditions-and-Treatments>
- 2) Hutchinson, N., Baird, G. L., & Garg, M. (2016). Examining the Reading Level of Internet Medical Information for Common Internal Medicine Diagnoses. *The American Journal of Medicine*, 129(6), 637-639. <https://doi.org/10.1016/j.amjmed.2016.01.008>
- 3) Safer, R. S., & Keenan, J. (2005). Health Literacy: The Gap Between Physicians and Patients. *American Family Physician*, 72(3), 463-468. <https://www.aafp.org/pubs/afp/issues/2005/0801/p463.html>

Fostering a Shared Vision of Positive Professionalism Through Crowdsourcing and Videography

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Idea: Using crowdsourced interviews and videography to enhance and disseminate the definition of positive professionalism at our institution.

Need: Although professionalism is considered a core competency across the spectrum of health sciences education, a universal definition of professionalism remains elusive [1]. Differing views and values may be influenced by one's role, level of training and cultural context [1]. Crowdsourcing is increasingly used as a tool in medical education to create consensus around a shared problem [2]; moreover, the use of videos can be an effective tool in medical education to increase learning and retention [3]. At Baylor College of Medicine (BCM), the Center for Professionalism is charged with creation of a culture of civility, compassion and connection. Foundational to this mission is ensuring that the BCM community has a shared understanding of the definition of positive professionalism. We seek to conduct interviews across the spectrum of learners, staff and faculty at Baylor College of Medicine regarding the definition of professionalism, and to combine these interviews into an educational video to share across the institution. Through crowdsourcing and videography, we aim to both enhance and disseminate the definition of positive professionalism across BCM.

Methods: To gain insight into what professionalism means among members of the BCM community, we plan to conduct a minimum of 30 interviews among learners, staff and faculty. Interviews will include broad questions such as "how do you define professionalism" as well as more specific questions such as "why is professionalism important to patients, colleagues or other members of our learning and working environments?" We will also share the current institutional definition of professionalism: "a set of attitudes and behaviors that cultivates competence and connection through respectful and trustworthy relationships." We will then determine how each individual's definition of professionalism compares to the institutional definition. Interviewees will also provide input on how best to promote positive professionalism and enhance the culture of professionalism at BCM. Portions of the taped interviews will be combined into a high quality video for dissemination across the institution.

Evaluation Plan: Because this initiative aims to both enhance the definition of professionalism, and foster improved understanding of professionalism across our institution, the program evaluation plan includes assessment of each of these domains. To enhance our institutional definition of professionalism, transcripts from the interviews will be analyzed using ChatGPT to identify salient themes. Using qualitative analysis, elements of the definition of professionalism that are identified through crowdsourcing will be compared to the current institutional definition. If meaningful characteristics of professionalism are identified by a majority of the "crowd" which are lacking in the current definition, the institutional definition will be revised. To evaluate the effectiveness of the initiative in disseminating the institutional definition of professionalism, we plan to conduct a pre and post survey among institutional leaders regarding their understanding of the definition of positive professionalism across BCM.

Potential Impact: By crowdsourcing and incorporating input from learners, staff and faculty, we will increase the diversity of viewpoints represented in our institutional definition of professionalism. The compilation video will also create an engaging tool to foster a shared mental model of professionalism across, and potentially beyond, the institution.

References:

- 1) Alexis DA, Kearney MD, Williams JC, Xu C, Higginbotham EJ, Aysola J. Assessment of Perceptions of Professionalism Among Faculty, Trainees, Staff, and Students in a Large University-Based Health System. *JAMA Netw Open*. 2020;3(11):e2021452. Published 2020 Nov 2. doi:10.1001/jamanetworkopen.2020.21452

- 2) Bow HC, Dattilo JR, Jonas AM, Lehmann CU. A crowdsourcing model for creating preclinical medical education study tools. *Acad Med.* 2013;88(6):766-770. doi:10.1097/ACM.0b013e31828f86ef
- 3) Dong C, Goh PS. Twelve tips for the effective use of videos in medical education. *Med Teach.* 2015;37(2):140-145. doi:10.3109/0142159X.2014.943709

Telemedicine Competence: A Key Skillset for Tomorrow's Physicians

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Idea: A targeted training curriculum for third and fourth-year medical students for best practices, ethics, and limitations to telemedicine.

Need: Incorporating a telemedicine curriculum for 3rd/4th-year medical students and residents is paramount for ensuring well-prepared future physicians. Telemedicine can bridge geographical and socioeconomic disparities. Its pronounced use during the COVID-19 pandemic proved its efficacy and ensured its secure place in healthcare. Proficiency in its use, therefore, is vital for those in advanced stages of training, especially for remote care delivery.(1) Telemedicine promotes early detection and intervention; thus, mastering remote consultations via accurate history-taking and virtual physical exam skills becomes crucial for effective diagnosis and management. Particularly in emergent cases, effective virtual triage skills must be learned.(2) Further, regarding the bread and butter of telemedicine, developing appropriate virtual communication skills is necessary to maintain rapport. Navigation of ethics, limitations, HIPAA compliance, and risks of prescription without an in-person consultation should all be mastered.(3) By instilling this knowledge, we prepare our upcoming medical professionals to navigate the evolving landscape of healthcare, ensuring a blend of efficiency, equity, and ethics.

Methods: This curriculum on telemedicine services is designed specifically for 3rd and 4th year medical students, given their foundational medical knowledge and the increasing relevance of virtual care in modern practice. The primary goal is to impart comprehensive knowledge and skills within the practice of telemedicine, while ensuring students can confidently navigate associated technological and ethical challenges. The content of the program is devised into four learning pillars: [I] Theoretical underpinnings of telemedicine and its role in patient care; [II] Practical guidance on utilizing common telehealth platforms; [III] Ethical considerations in virtual care; and [IV] Role-play and simulation of virtual patient encounters to enhance clinical decision-making. This curriculum is intended to be delivered over a four-week period, dedicating approximately 10 hours per week. Training will be a mix of online learning and in-person to ensure adequate oversight, content delivery, and simulation training seminars. This program is designed to employ a blend of teaching strategies to ensure engagement and active participation including interactive lectures, hands-on sessions with telemedicine tools, and feedback-driven virtual patient simulations. Moreover, role-play activities were embedded to help students embody both the physician and patient roles, promoting a deeper understanding of the patient experience in virtual care.

Evaluation Plan: To gauge the effectiveness of our telemedicine curriculum, a multi-faceted evaluation plan has been devised. Initially, quantitative metrics will be employed: students will take pre- and post-course assessments to measure knowledge gains and skills enhancement. Subsequent to the course's conclusion, students will participate in an objective structured clinical examination (OSCE) tailored to telemedicine scenarios, assessing practical proficiency. On the qualitative front, feedback will be solicited from both students and instructors. Small focus group sessions will allow students to articulate their experiences, offering insights into the curriculum's strengths and areas needing improvement. In parallel, instructors will provide feedback on curriculum delivery, student engagement, and observed challenges. This composite approach ensures a holistic understanding of the curriculum's impact, allowing for iterative refinements in subsequent offerings.

Potential Impact: This telemedicine program equips medical students with vital virtual care skills, addressing modern healthcare's evolving demands. By blending theory with practice, students emerge prepared to offer quality remote care, enhancing patient accessibility and ensuring continuity in diverse medical scenarios, ultimately elevating healthcare standards.

References:

- 1) Gareev I, Gallyametdinov A, Beylerli O, et al. The opportunities and challenges of telemedicine during COVID-19 pandemic. *Front Biosci (Elite Ed)*. 2021;13(2):291-298. doi:10.52586/E885
- 2) Gupta VS, Popp EC, Garcia EI, et al. Telemedicine as a component of forward triage in a pandemic. *Healthc (Amst)*. 2021;9(3):100567. doi:10.1016/j.hjdsi.2021.100567
- 3) Chaet D, Clearfield R, Sabin JE, Skimming K; Council on Ethical and Judicial Affairs American Medical Association. Ethical practice in Telehealth and Telemedicine. *J Gen Intern Med*. 2017;32(10):1136-1140. doi:10.1007/s11606-017-4082-2

Developing Large Language Model Guidelines for Use in the Classroom

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Idea: A research ethics course for MD/PHD students developed a Large Language Model policy to guide use of ChatGPT in the classroom.

Need: Many university systems have not yet developed or disseminated official policy around the use of Artificial Intelligence, particularly Large Language Model programs like ChatGPT, in the classroom. Medical faculty have received little guidance on how to properly incorporate Large Language Models like ChatGPT in the classroom and how to address LLM use. Rather than outright banning LLM, faculty have the opportunity to engage with student learners about the appropriate use and work together to set classroom expectations. Without official guidance and facing the prospect of either outright banning LLM or embracing it without any parameters, medical faculty must work directly with their students to identify when, why and how LLM should be used in the classroom and implement those guidelines.

Methods: The goal was to understand the ethical issues of LLMs and develop classroom guidelines. Prior to class, faculty asked ChatGPT to write a policy governing itself for a class called, "Responsible Conduct in Scientific Research," the results of which were shared with students before class. Learners were also assigned three articles to read prior to class. The first hour of class was an interactive lecture that explored definitions and ethical issues. Students and faculty discussed whether it was appropriate to use LLMs as research assistants, copy editors, preliminary drafters, or databases. Other issues discussed included privacy concerns, copyright, intellectual property, and confidentiality. Next, learners worked in groups to review the ChatGPT policy it had created for itself to govern its appropriate use in the course, and then worked to develop their own set of guidelines steeped in ethical principles of research and professional conduct. Learners drafted guidelines on: generating scientific hypotheses, editing assistance, experimental design, writing assistance, and developing images or data. Learners were engaged in active learning, working in small groups of 3-6 students, for an hour to develop the guidelines. After drafting their guidelines, these were shared with the class, and combined into a classroom policy. This project was completed in a two-hour time frame in a classroom of 40 undergraduate medical students and PHD science students.

Evaluation Plan: The LLM guidelines were incorporated into the course syllabus and abided by for the remainder of the semester. Student evaluations of the assignment will be collected in December 2024. The guidelines will be shared with the Dean of the College of Graduate Studies. Our hope is that the guidelines will be considered and incorporated into the college policy on LLM, which is forthcoming.

Potential Impact: Faculty can develop their own LLM guidelines for their courses with buy-in from learners. The guidelines set the expectations for the class and allow everyone to know exactly what is and is not appropriate use. This exercise allows faculty and learners to understand how LLM can be used and what its limitations and promises are.

References:

- 1) Abd-alrazaq A, AlSaad R, Alhuwail D, et al. Large language models in medical education: opportunities, challenges, and future directions. *JMIR Med Educ.* 2023; 9:e48291. doi: 10.2196/48291
- 2) Horowitch R. Here comes the second year of AI college. *The Atlantic.* August 7, 2023. Accessed August 7, 2023. <https://www.theatlantic.com/ideas/archive/2023/08/ai-chatgpt-college-essay-plagiarism/674928/>

Enhancing Residents' Learning Motivation at Hospital Setting Through Virtual Stimulus

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Idea: To enhance the internal medicine resident's learning motivation using regularly spaced virtual stimulus.

Need: Physicians face an ever-expanding volume of new medical knowledge which they must access, appraise, synthesize, and apply to practical, high-quality care for patients, families, and communities. Restrictions on resident work hours may limit volume and diversity of clinical experience during training, potentially limiting educational experiences for trainees in the traditional residency model. The Accreditation Council for Graduate Medical Education emphasizes fostering self-directed learning among medical residents for continuous professional development and the delivery of high-quality patient care based on constant self-evaluation (1). Self-directed learning is limited by lack of motivation, procrastination, overwhelming administrative work and the need for external guidance. Prior studies involving medical information sharing using convenient electronic tools like WhatsApp have been documented to positively increase the knowledge of residents (2). This project proposes an innovative approach to enhance residents learning motivation and knowledge of core cases by leveraging virtual stimulus.

Methods: The proposed methodology involves enrolling medical residents in an opt-in manner for a virtual learning program. Subject matter experts including senior residents would meticulously create teaching algorithms for each medical system and share it with the residents on the WhatsApp group for discussion on the following day. This proactive approach motivates residents to pre-read topics, fostering intellectual discussions within individual medicine teams under attending oversight which will enable exposure to the real-life clinical experience treating the patients and potential pitfalls that the residents could come across. The shared goal ensures collaborative engagement, allowing peers and experts to address specific doubts at the time of their convenience with least interference to the daily routine. This structured process cultivates intrinsic motivation, contributing to a positive learning environment. Additionally, the program incorporates quarterly system-based tests to assess residents' acquired knowledge, further enhancing the educational experience.

Evaluation Plan: Pre-intervention assessment would be conducted to evaluate the challenges faced by residents for learning at workplace and assessing their overall comfort/confidence level managing the patients independently. The program would be implemented with interval residents feedback to gain insights into residents' perceptions of the virtual stimulus program. Iteration on the design and content based on feedback would be ensured to optimize the learning experience and engagement. Post intervention assessment would be conducted in approximately 9 months to reassess their level of motivation for learning and improvement in comfort managing the patients independently. In addition to resident experience, potential impact on the Inservice training examination and medical boards would be evaluated.

Potential Impact: Virtual stimulus at intervals can help motivate the residents to engage in active learning despite all the potential barriers and fill knowledge gaps and stay updated with the latest medical information. As a result, residents are likely to make more informed clinical decisions, leading to improved patient care and safety. This will integrate self

References:

- 1) Edgar L, McLean S, Hogan SO, Hamstra S, Holmboe ES. The milestones guidebook. Accreditation Council for Graduate Medical Education. 2020:6-19.
- 2) Bakshi SG, Bhawalkar P. Role of WhatsApp-based discussions in improving residents' knowledge of post-operative pain management: a pilot study. Korean journal of anesthesiology. 2017 Oct 1;70(5):542-9.

Evaluating and Enhancing Medical Students' Understanding of Ai Tools in Education

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Idea: Survey administration pre/post seminar gauging medical students' understanding of how ChatGPT and other AI models can assist them in medical school.

Need: Generative AI models (GAI) such as Chat Generative Pre-Trained Transformer (ChatGPT) have been shown to possess great potential in both the fields of medical education and medical practice. As this technology continues to become more advanced and utilized at an increasing rate, it becomes more important than ever to give students an understanding of this technology as early in their medical journey as possible. While a plethora of anecdotal evidence has shown ChatGPT's utility in both the classroom and the medical ward, little clinical research has been conducted to back these claims. As a result, many medical students remain unaware of how to use GAI in learning and medical practice. This project aims to bridge the gap between the potential and utilization of this service through a 1-hour seminar where students will not only learn how to use ChatGPT as a medical student, but also practice using it in real-time. By increasing awareness for the utility of ChatGPT in medical school, we are able to ensure that students will always have knowledge of and access to the most cutting edge technologies to give them as many advantages as possible when learning and treating patients.

Methods: The goal of this project is twofold. First, we are looking to gain an understanding of the knowledge medical students have surrounding ChatGPT, as well as a sense of the initial perceptions surrounding its utility in medical school as well as in the medical field at large. An initial 16 question Google Form survey will be administered at the start of the 1-hour session, followed by a 1 hour informational seminar, where the co-authors will explain basic concept of ChatGPT and AI language models, how they function, and the different ways that these tools can be used in medical school. Specific topics covered include studying for exams, learning concepts, creating and narrowing differential diagnoses, clinical research, and professional development. Examples of text prompts and AI outputs relating to each of these topics will also be shown. The seminar will also feature an interactive section, where audience members will be able to create their own prompts based on the information they learned during the seminar. Finally, to assess how effective the seminar was at relaying the above information, an 11 question survey will be administered at the end, asking students similar questions as the initial survey. Target learners of this project include medical students of all years, and to this end different sec however other populations of students including resident physicians and even pre-medical physicians may find the seminar to be of interest.

Evaluation Plan: To evaluate our program we intend to administer one pre-survey and two post-surveys. The pre-survey will include questions assessing the following variables: student's familiarity with Chat GPT; whether they've used Chat GPT previously (in general or for studying); whether they have confidence in its proposed applications (assisting with content review/research endeavors/career planning/stress relief/medical decision making); and their general outlook on how Chat GPT could impact healthcare and the job market. Our first post-survey will assess whether our workshop had any impact on these variables. We will also ask whether participants found the workshop engaging, informative, or useful; how confident they feel in their ability to use Chat GPT for the demonstrated purposes; and whether they have any critiques or suggestions. The second post-survey will be sent out one month after the workshop. It will assess whether they have been using Chat GPT in their studies; if they felt our workshop had adequately prepared them to do so; whether they learned anything new on their own; if their outcomes have been satisfactory; and whether they had any new feedback or suggestions.

Potential Impact: By normalizing the use of Artificial Intelligence in medical education and practice, medical students and physicians will have learned new tools in caring for their patients, and gain ease-of-access in understanding medical concepts and conducting research.

References:

- 1) Sallam M. ChatGPT Utility in Healthcare Education, Research, and Practice: Systematic Review on the Promising Perspectives and Valid Concerns. *Healthcare (Basel)*. 2023 Mar 19;11(6):887. doi: 10.3390/healthcare11060887. PMID: 36981544; PMCID: PMC10048148.
- 2) Cascella M, Montomoli J, Bellini V, Bignami E. Evaluating the Feasibility of ChatGPT in Healthcare: An Analysis of Multiple Clinical and Research Scenarios. *J Med Syst*. 2023 Mar 4;47(1):33. doi: 10.1007/s10916-023-01925-4. PMID: 36869927; PMCID: PMC9985086.
- 3) Dave T, Athaluri SA, Singh S. ChatGPT in medicine: an overview of its applications, advantages, limitations, future prospects, and ethical considerations. *Front Artif Intell*. 2023 May 4;6:1169595. doi: 10.3389/frai.2023.1169595. PMID: 37215063; PMCID: PMC10192861.

Understanding Psychedelics and Their Medical Applications: An Exploration of a Novel Team-Based Lear

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Idea: Implementing a novel TBL curriculum to enhance medical students' understanding of psychedelics: knowledge, comprehension, and ethical considerations.

Need: Team based learning (TBL) has emerged as a transformative learner-centered teaching strategy in phase one medical education. Initially introduced in 2001 as a solution to the overwhelming volume of material in medical education, an increasing number of medical schools are now adopting TBL course formats to improve learner outcomes.¹ This study introduces a novel two-hour TBL curriculum at the Kirk Kerkorian School of Medicine (KKSOM) at UNLV. The primary objective is to investigate the efficacy of a flipped classroom TBL course in augmenting medical students' comprehension and knowledge of psychedelic substances.

The need to incorporate psychedelics education into medical training stems from an increased interest in psychedelics in the United States. Data indicates that approximately 5.5 million Americans, 18 years and older, experimented with psychedelic substances in 2019 with an anticipated increase in the future.² Beyond recreational use, there has been a notable upswing in exploring psychedelics as a therapeutic tool. Despite this interest, there exists a significant gap in physician training on psychedelics. The aim of this study is to bridge this gap in medical education using a unique curriculum design.

Methods: Second year medical students will receive a two hour faculty led, team-based learning curriculum on the therapeutic use of psychedelics. This course will be administered as part of a required integrative medicine course spanning over the course of phase one medical education. The design will engage medical students in an unbiased learning of the subject matter. Learning objectives will be clearly defined prior to the session.

TBL format:

Pre-TBL activity

1. Pre-class prep (assigned reading on psychedelics).
2. Administration of pre-intervention survey on attitudes, perceived knowledge, and side effect concerns.
3. Administration of individual readiness assurance testing (iRAT) comprised of 12 multiple choice questions on knowledge of psychedelics and legal/ethical considerations.

TBL activity

1. Randomized small group division, presentation of learning objectives, and clinical vignette introduction.
2. Small group discussion with questions relating to the above clinical vignette guided by faculty facilitators.
3. 10-minute break
4. TBL activity discussion/Q&A in a larger group guided by facilitators.
5. Team readiness assurance testing (tRAT) comprised of 12 multiple choice questions on knowledge of psychedelics and legal/ethical considerations.

Post-TBL activity

7. Post intervention survey on attitudes, perceived knowledge, and side effect concerns.
8. Curriculum evaluation- qualitative format.

Evaluation Plan: An IRB to conduct this study has already been obtained at KKSOM. The curriculum will be evaluated via several mechanisms. A readiness assurance test will be prepared consisting of

twelve multiple choice questions, testing student knowledge on psychedelics. The test has been prepared by an interdisciplinary faculty to include questions appropriate for the medical student level of training. Comparison of iRAT and tRAT scores will be performed to assess successful mastery of the subject matter. Additionally, a survey on attitudes, perceived knowledge, and side effect concern will be administered pre and post intervention. This survey has been developed in congruence with previous work done on assessing knowledge and perceptions on medical cannabis use among medical students.³ A qualitative student evaluation will also be presented to assess the quality and student feedback on the curriculum.

Primary end point will be to assess whether TBL methodology improves the comprehension, knowledge, and ethical understanding of psychedelic substances among medical students. A secondary end point will be to assess if medical student perception and attitudes evolve at the end of the training.

Potential Impact: Given the FDA breakthrough therapy designation of MDMA and psilocybin, interest in psychedelic therapy is growing. Our educational program aims to prepare future doctors to counsel patients effectively. We anticipate the curriculum will serve as a model for other institutions, potentially influencing perceptions and future legislation.

References:

- 1) Koles, P. G., Stolfi, A., Borges, N. J., Nelson, S., & Parmelee, D. X. (2010). The impact of team-based learning on medical students' academic performance. *Academic Medicine*, 85(11), 1739-1745.
- 2) Livne, O., Shmulewitz, D., Walsh, C., & Hasin, D. S. (2022). Adolescent and adult time trends in US hallucinogen use, 2002–19: any use, and use of ecstasy, LSD and PCP. *Addiction*, 117(12), 3099-3109.
- 3) Jacobs, R. J., Kane, M. N., & Caballero, J. (2022). Predictors of medical students' perceptions about medical cannabis. *Cureus*, 14(4).

Assessing the Effectiveness of an Escape Room Challenge in Knowledge Retention in an Intern Bootcamp

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Idea: Designing, implementing, and assessing a medical escape room challenge to use gamification and spaced repetition to re-enforce didactic learning.

Need: There is a shift in medical education to a learner-centered approach. As instructional delivery methods in medicine are changing, our approach to teaching medicine needs to adapt as well. Team-based learning is crucial for developing expertise in collaborating with other individuals and adapting to situations, which can include gamification and simulation. Serious games are one type of curriculum design that includes challenging goals, scoring, and high engagement from learners. They have been shown to increase learner satisfaction and knowledge over traditional instructional methods. Furthermore, games are engaging and encourage creative problem solving. Escape room challenges are a novel serious game method for gamification in medical education grounded in experiential learning and self-determination theory - requiring critical thinking skills, teamwork, communication, and engagement by the students. Escape room challenges have been utilized in a variety of settings including pharmacy students, nursing students, medical students, and resident education.

Methods: In our residency program, all internal medicine interns are required to attend "Intern Bootcamp" (IB) where 13 fundamental topics from the American Board of Internal Medicine Blueprint document are taught by the core faculty. Following residency, to obtain board certification, residents must take and pass the American Board of Internal Medicine Maintenance of Certification Exam (ABIM-MOC). Performance on question banks has been correlated with performance on the ABIM-MOC. The ABIM publishes the Medical Knowledge Self-Assessment Program (MKSAP) question bank to prepare medicine residents for the ABIM-MOC.

This is a prospective case-control study. Interns were given a pre-test before IB to estimate baseline medical knowledge. Questions were selected from MKSAP 18 question bank with roughly two per core topic. At the time of the pre-test, residents filled out a Likert scale of how comfortable they are diagnosing and treating each of the topics. All interns attend the bootcamp series of 1hr lectures and are encouraged to self-study as well. After the series finishes, half the interns go through an interactive escape room challenge to reinforce the lecture content. The exposure group was selected based on clinical schedules and ability to attend the challenge, while keeping both arms equivalent in number. Two weeks after the challenge, all interns will retake the pre-test and fill out the same Likert scale survey.

Evaluation Plan: The primary study outcome is to compare the pre- and post-test scores along with the Likert scale survey responses between the case and control groups. Results will be analyzed using descriptive statistics and comparison between groups will be done using appropriate statistical tests. For fun, we will also track the time it takes groups to complete the escape room challenge and award a prize to the team that completes it the fastest. At the end, we will hold a debriefing session to gather feedback to improve the experience.

Potential Impact: Escape room challenges require time investment on the front end but can be carried forward with minimal adaptation. They do not require patients or expert facilitators. Gamification can enhance team building and the materials are low cost. Escape rooms offer an engaging way to aid knowledge retention and increase learner satisfaction.

References:

- 1) Guckian J, Eveson L, May H. The great escape? The rise of the escape room in medical education. *Future Healthcare Journal*. 2020; 7:112-115.

- 2) Rincon SXJ, Mejia AT. The learning behind the escape room. *Medical Teacher*. 2020; 42(4): 480-481.
- 3) Wartman, Steven A. 2019. "The Empirical Challenge of 21st-Century Medical Education." *Academic Medicine: Journal of the Association of American Medical Colleges* 94 (10): 1412–15.

Building an Intervention for HPI Skill Development with Juvenile Autism Spectrum Disorder Patients

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Idea: Build an intervention for medical students to learn more about Autism and enhance communication skills to improve inclusivity within healthcare.

Need: There is a fundamental underlying problem with communication, rigid procedures, and a lack of interpersonal skills among physicians; this propagates health disparities and creates barriers between individuals with Autism Spectrum Disorder and the healthcare system. The World Health Organization reports that people with Autism are often more reliant on physicians due to greater vulnerability to chronic conditions, risk factors such as physical inactivity/poor diet, and the risk of violence, abuse, and injury. Unfortunately, though, many Autistic individuals become dissuaded from seeking out healthcare after just a single negative interaction with a physician. A study conducted by Nicolaidis et al., 2015 identified and categorized negative patient-physician interactions based on patient, provider, or system-level factors. Provider-level factors included lack of knowledge about Autism, incorrect assumptions, willingness to allow written communication, openness to providing accommodations, and skill in incorporating supporters. The core of the problem can be traced back to medical education and the lack of hands-on disability competency training in most programs.

Methods: A pilot workshop will be designed and implemented for Wayne State Medical Students to attend based on Kern's 6-step approach to curriculum development: Problem Identification and General, Targeted Needs Assessment, Goals and Objectives, Educational Strategies, Implementation, and Concepts for Evaluating the Effectiveness of the Curriculum. This workshop will focus on teaching future physicians how to better communicate with juvenile ASD populations based on established behavioral patterns within the ASD community. A subset of students will be trained as SPs to evaluate the progress of students. Both the students attending the workshop and SPs will fill out a pre and post-survey with questions built using Kirkpatrick's Four-Level Training Evaluation Model. This workshop will be a singular 3-hour session held in a classroom at WSUSOM. Students will first listen to a presentation on prevalent healthcare disparities relating to Autism, followed by an opportunity to practice taking an HPI with trained SP students using specific communication skills taught.

Evaluation Plan: The results will be based on data analysis and comparison of the pre and post-workshop survey responses. The results will be stratified into 4 categories and evaluated based on Kirkpatrick's Four-Level Training Evaluation Model: reaction (was the workshop valuable), learning (knowledge before and after and confidence level of students), behavior (assessment of skill via trained SPs), health outcomes (long term impact that will not be assessed with this intervention).

Potential Impact: If successful, the results of this workshop intervention will indicate that medical students would benefit from specific hands-on disability-based training. This training will help students maintain robust relationships with their future patients and help mitigate health disparities in the long-term health care of individuals with disabilities.

References:

- 1) Calleja, S., Amirul Islam, F. M., Kingsley, J., & McDonald, R. (2019). The disparities of healthcare access for adults with autism spectrum disorder: Protocol for a systematic review. *Medicine*, 98(7). <https://doi.org/10.1097/MD.00000000000014480>
- 2) Nicolaidis, C., Raymaker, D. M., McDonald, K. E., Baggs, E. V., Dern, S., Kapp, S. K., Weiner, M., Boisclair, C., & Ashkenazy, E. (2015). "Respect the way I need to communicate with you": Healthcare experiences of adults on the autism spectrum. *Autism: The international journal of research and practice*, 19(7), 824. <https://doi.org/10.1177/1362361315576221>

- 3) Lewis, M. A., Lewis, C. E., Leake, B., King, B. H., & Lindemann, R. (2002). The quality of health care for adults with developmental disabilities. *Public health reports (Washington, D.C. : 1974)*, 117(2), 174–184. <https://doi.org/10.1093/phr/117.2.174>

Understanding the Plastic Surgery Related Experiences and Educational Needs of Junior Doctors

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Idea: Exploring the plastic surgery related experiences, needs, confidence, and knowledge gaps of junior (foundation year) doctors to improve the curriculum.

Need: Plastic surgery is a diverse specialty, and its basic principles e.g. burn care, wound care, local anaesthesia and suturing, are transferable across multiple medical and surgical specialties. Plastic surgeons also collaborate with multiple specialities and therefore many doctors, even if they do not pursue plastic surgery, will still be involved in the care of plastic surgery patients throughout their careers (Helmy & Alfeky, 2017).

Foundation year (FY) doctors are newly graduated junior doctors who work throughout multiple medical and surgical specialities on a rotation basis and are often the first to review patients, escalate cases to their seniors as required, and liaise with the appropriate specialities. To do so effectively and appropriately, a competent level of medical knowledge in the relevant field, in this case plastic surgery, is required.

This study aims to gain insight into the perceived confidence, knowledge gaps, skills and needs of FY doctors. This will allow us to better understand any disparity present between the actual lived experiences of FYs, and the educational activities and curriculum delivered, and suggest ways to align the curriculum with the current needs of FY doctors.

Methods: This is a qualitative study which uses phenomenology to understand the lived experiences of 8-10 FY doctors, through a semi-structured individual interview.

The study population includes FY trainee doctors with at least 1 year of work experience. 8-10 participants with varying career interests and exposure to plastic surgery are recruited using a purposive sampling strategy. Eligible participants are invited to participate via email and participants are selected according to the speciality they intend to pursue as a career and if they have had a rotation in plastic surgery to ensure a heterogenous study population.

A 60-75 minute semi-structured individual interview is conducted with each participant and the audio is recorded. This interview explores the plastic surgery related encounters that FY's experience during their day-to-day working hours, discusses the FY's self-perceived needs, knowledge gaps and confidence pertaining to plastic surgery related clinical scenarios and skills and identifies plastic surgery related educational activities that FYs have participated in.

Evaluation Plan: The recorded audio is transcribed and analysed using reflexive thematic analysis using the 6 phase framework as described by Braun and Clarke (Braun & Clarke, 2006). This approach allows for a systematic analysis of the diverse viewpoints of how individuals experience and utilise plastic surgery in their daily medical work life. This will yield a comprehensive account of the knowledge gaps, needs and lived experiences of FY doctors in relation to plastic surgery. These identified knowledge gaps, needs and experiences will be matched with the current curriculum delivered in order to identify areas and opportunities for curriculum improvement.

Potential Impact: A gap in the plastic surgery knowledge of junior doctors is one of the factors which leads to the inappropriate initial management of plastic surgery cases and referrals (Gorman et al., 2012). Improvement in the knowledge gaps is desired to improve the quality of patient care and safety through improved clinical practice and referral patterns.

References:

- 1) Braun, V. and Clarke, V. (2006) 'Using thematic analysis in psychology', *Qualitative Research in Psychology*, 3(2), pp. 77–101. doi:10.1191/1478088706qp063oa.
- 2) Gorman, M. et al. (2012) "Waiting times and decision-making behind acute plastic surgery referrals in the UK," *Journal of Hospital Administration*, 2(1), p. 68. Available at: <https://doi.org/10.5430/jha.v2n1p68>.
- 3) Helmy, Y. and Alfeky, H. (2017) "Plastic surgery interaction with other specialities: Scope of specialty in different minds," *Plastic Surgery and Modern Techniques*, 3(4). Available at: <https://doi.org/10.29011/2577-1701.100031>.

Interdisciplinary Education on Spatial Neglect: Bridging Awareness Gap in Inpatient Rehabilitation

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Problem Statement: Implementation and evaluation of a pilot interdisciplinary education program to improve spatial neglect (SN) awareness using a pre/post-survey.

Rationale: Spatial Neglect (SN) is a complex and disabling neurocognitive syndrome associated with brain damage. SN is associated with longer hospitalizations, increased fall risk, and worse rehabilitation outcomes (1). To compound, individuals often have anosognosia, a lack of awareness of their neglect symptoms, which can significantly impede treatment (2). Although common, SN is difficult to diagnose due to the variability in assessments, heterogeneous nature of the disorder and lack of assessment utilization (3). Research shows over 200 terms used to document SN, leading to confusion and subsequently hindering its assessment and awareness among providers (1). The negative impact of SN underscores the need for additional education and improved awareness. We hope to determine whether those who attended the standardized educational presentation on SN will have a significant difference in population means in perceptions and awareness of SN in the post-survey compared to the matched group in the pre-survey.

Methods: The education program informed participants on spatial neglect prevalence, clinical presentation, increased risk of adverse outcomes, and future plans for assessment and treatment options. We include (n=69) matched participants who attended the standardized educational presentation on spatial neglect and completed both pre and post-surveys. Participants included: Registered nurses (n=23), Certified Nursing Assistants (n=15) Occupational therapists (n=7), Physical Therapists (n=11), Speech Language Pathologists (n=6), Therapy Assistants (n=2), Other (n=5). We describe and compare the matched pre- and post-surveys.

Results: After implementation, familiarity with spatial neglect improved 2.88 ± 1.204 to 3.65 ± 0.764 ($p < 0.001$), clinical assessment protocols 2.06 ± 1.028 to 3.23 ± 0.926 ($p < 0.001$), safety concerns 3.34 ± 1.441 to 4.07 ± 0.88 ($p < 0.001$), impact on patient's activities of daily living 3.5 ± 1.321 to 4.1 ± 0.883 ($p < 0.001$), evidenced-based treatment options 2.37 ± 1.196 to 3.27 ± 0.947 ($p < 0.001$). Additionally, participants reported a high degree of training satisfaction, a high likelihood of training recommendations, and strong support for new therapy modalities for spatial neglect.

Potential Impact: Targeted interdisciplinary education programs with a specific focus on SN resulted in changes in the perception and awareness of SN. Psychiatrists should work with their interprofessional team to reinforce spatial neglect education to enhance communication between providers and to improve care for patients with spatial neglect.

References:

- 1) Williams LJ, Kernot J, Hillier SL, Loetscher T. Spatial Neglect Subtypes, Definitions and Assessment Tools: A Scoping Review. *Front Neurol.* 2021;12(November). doi:10.3389/fneur.2021.742365
- 2) Ronchi R, Bolognini N, Gallucci M, et al. (Un)awareness of unilateral spatial neglect: A quantitative evaluation of performance in visuo-spatial tasks. *Cortex.* 2014;61:167-182. doi:10.1016/j.cortex.2014.
- 3) Chen P, Hreha K, Fortis P, Goedert KM, Barrett AM. Functional Assessment of Spatial Neglect: A Review of the Catherine Bergego Scale and an Introduction of the Kessler Foundation Neglect Assessment Process. *Top Stroke Rehabil.* 2012;19(5):423-435. doi:10.1310/tsr1905-423

OTC Medications: Education (Not Prescription) Needed

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Idea: To implement an innovative approach to learning about over the counter (OTC) medications during the 3rd year family medicine clerkship.

Need: Despite more than \$40 billion being spent on OTC medications in the United States in 2022, and over 80% of adult patients utilizing OTC medications as first line treatment for minor ailments, there is no current formal curriculum for OTC medications at the University of Florida College of Medicine. Students should have an understanding of common OTC medication uses, costs, side effects, and interactions to be able to effectively guide patients in their usage of such medications.

Methods: We plan to tailor existing curricula utilized at other institutions on OTC medications for our medical students. In order to best meet the needs of our learners, an initial survey of all medical students at the University of Florida College of Medicine is planned. This survey will guide the creation of this learning activity and includes important background data on current knowledge and attitudes with recommending OTC medications to patients in several categories: pediatrics, pregnant and breastfeeding patients, emergency contraception, gastrointestinal OTC medications, cold/flu/allergy medications, and pain relievers. Additional information will be sought regarding the way in which students would like to receive information on OTC medications, including self-guided study through PowerPoint, videos, podcast, or selected readings; a traditional lecture setting; a pharmacist-guided pharmacy field trip; an independent pharmacy trip with an information sheet (scavenger hunt); or some combination of the above methods.

Evaluation Plan: Upon initiation of this project, we plan to implement pre- and post- curriculum student questionnaires to assess knowledge and attitudes of students regarding OTC medications. Additional post-course curriculum questions will address learner satisfaction with the curriculum, and free-text boxes for suggestions/modifications. Upon initiation of this project, we plan to implement pre- and post-curriculum student questionnaires to assess knowledge and attitudes of students regarding OTC medications. Additional post-course curriculum questions will address learner satisfaction with the curriculum, and free-text boxes for suggestions/modifications.

Potential Impact: We anticipate that the OTC curriculum would benefit students and the patients they treat. Beyond family medicine, the knowledge gained will be beneficial in all clerkships, and outside of the clinic setting, students would also be able to advise family and friends on OTC medications in a more knowledgeable manner.

References:

- 1) Henley E, Wenzel-Wamhoff J. Teaching medical students about over-the-counter medications. *Med Educ.* 2000 Jul;34(7):580-2. doi: 10.1046/j.1365-2923.2000.00470.x. PMID: 10886642.
- 2) Higgins Joyce A, Van Genderen K, Flais SV, Keeley M, Gollehon N, Ryan MS. The ABCs of OTCs: A Video-Based Curriculum Regarding Over-the-Counter Pediatric Products. *MedEdPORTAL.* 2023 Jun 6;19:11315. doi: 10.15766/mep_2374-8265.11315. PMID: 37287958; PMCID: PMC10241986.
- 3) OTC sales statistics. Consumer Healthcare Products Association. Accessed September 21, 2023. <https://www.chpa.org/about-consumer-healthcare/research-data/otc-sales-statistics>

Implementation of a Programmatic Assessment System for Anesthesiology Residents

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Idea: Advance towards competency-based training and improve resident feedback through implementation of a novel tool for programmatic assessment.

Need: Though the ACGME has supported competency-based medical education [1], operationalizing and implementing a CMBE system within anesthesiology residency has yet to be achieved. Our current programs are based on time in training model, where progression is determined by completion of a rotation, and competency assessment is variable, non-standardized, and often subjective. Milestones and the Clinical Competency Committee have provided progress towards the ideal yet need improvements in aligning learning with clinical contexts and evaluation. We aim to develop a system to measure and ensure that residents achieve competence in rotations by implementing a programmatic assessment system [2]. Educators have developed and adopted the framework of Entrustable Professional Activities (EPAs) to support this shift. EPAs are tasks performed by physicians that can be directly observed, assessed, and entrusted to trainees when they have demonstrated sufficient competency. Within anesthesiology, EPAs have been piloted and developed into a tool for competence assessment [3]. Our group aims to build upon this work by creating rotation-specific competency requirements, which seek to align the incentives of the learner with the intended outcomes.

Methods: To attain this goal, our team implemented an assessment system that utilized an EPA framework to define targets that describe the level of knowledge, skill, and independence a resident should attain during each rotation. These targets clarify the level of competence a resident is expected to achieve during a given rotation, giving them a clear understanding of their goals and providing a shared mental model for trainees and attendings. This system requires the resident to acquire evaluations from multiple attendings regarding their level of competence to complete the rotation's objectives. The number of evaluations that residents acquire each month is tracked. Requiring multiple evaluations allows for diversity in evaluators and promotes frequent low-stakes assessments. Evaluations are tracked using MyTipReport, a mobile app that is accessible by residents and attendings, allowing for both to track growth and reflect on areas of weakness. This system will motivate the residents to ask for evaluations and feedback to attain their goals, aligning the incentives to attain feedback and achieve competency with the trainees' desire to progress through training.

Evaluation Plan: After planning stages, stakeholder buy-in, and education of faculty and trainees, we piloted the assessment tool from Jan 2023- June 2023. During this time, we gathered user feedback, identified problem areas, and made improvements. In order to assess the success of this evaluation tool, the outcomes we aim to measure are the compliance with workplace-based resident evaluations and compare it to the compliance of the prior tool. Preliminary data comparing July and August 2023 to July and August 2022 are dramatically improved. Further, we plan to compare the results and aim for improvement on our annual program ACGME survey regarding resident evaluation before and after implementation. Each resident is reviewed for compliance at the end of each month, and problem areas are addressed, such as faculty non-compliance.

Potential Impact: We hope to shift our focus from "time in training" to "achievement of a desired level of competency," enabling us to provide a more tailored training approach, identify gaps in competence, and ensure a path to competence for all trainees. This model can increase flexibility within training since competence, rather than duration, dictates progress.

References:

- 1) Ambardekar, A. P., Walker, K. K., McKenzie-Brown, A. M., Brennan, K., Jackson, C., Edgar, L., Ellinas, H., Long, T. R., Trombetta, C. E., Laskey, M. G., Wargo, B. W., Dainer, R. J., Draconi, C. S., &

- Mitchell, J. D. (2021). The Anesthesiology Milestones 2.0: An Improved Competency-Based Assessment for Residency Training. *Anesthesia and analgesia*, 133(2), 353–361.
- 2) Iobst, W. F., & Holmboe, E. S. (2020). Programmatic Assessment: The Secret Sauce of Effective CBME Implementation. *Journal of graduate medical education*, 12(4), 518–521.
 - 3) Woodworth, G. E., Marty, A. P., Tanaka, P. P., Ambardekar, A. P., Chen, F., Duncan, M. J., Fromer, I. R., Hallman, M. R., Klesius, L. L., Ladlie, B. L., Mitchell, S. A., Miller Juve, A. K., McGrath, B. J., Shepler, J. A., Sims, C., 3rd, Spofford, C. M., Van Cleve, W., & Maniker, R. B. (2021). Development and Pilot Testing of Entrustable Professional Activities for US Anesthesiology Residency Training. *Anesthesia and analgesia*, 132(6), 1579–1591.

Impact of a Student-Led Fall Risk Educational Workshop for Preclinical Medical Students

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Idea: A 2-hour medical student-led educational workshop on fall risk assessment and prevention for preclinical medical students.

Need: In the United States, falling is the leading cause of injury in adults aged 65 and older. Appropriate clinical assessment can identify patients with increased risk for falls. However, frequently there are significant challenges to effectively implementing these assessments due to complex interpersonal and research-to-practice barriers. Practical knowledge translation of falls prevention practices may assist in reducing barriers to implementing fall prevention practices, thus reducing preventable injury in patients. While fall prevention educational workshops have been historically faculty-led, recent literature emphasizes the use of student-led curriculum to increase content accessibility. Additionally, there is little data on the impact of falls prevention training given to preclinical medical students. The purpose of this study is to evaluate the feasibility and effectiveness of a student-led, 2-hour session on falls risk assessment and prevention for preclinical medical students. The impact of such a workshop has not yet been adequately studied in the literature.

Methods: This study will have a quasi-experimental, pretest-posttest design. The first survey will be administered prior to workshop participation, and the posttest survey after the completion of the workshop. The intervention will be a singular 2-hour long workshop. The event will be advertised to first- and second-year, medical students via email, social media apps and flyers. Anticipating full participation, the approximate number of student participants is 60. The participants will be divided into four groups, with an equal distribution of first- and second-year students per group. There will be a maximum of 15 first- and second-year medical student participants and 2-medical student facilitators per station. The groups will rotate between four, 15-minute stations. The stations will include (1) case-based, fall risk assessment and focused history, (2) fall risk trivia, (3) fall-focused physical exam, and (4) gait analysis, proper use of mobility assist devices, and simulation of visual impairment in virtual reality. The virtual reality apps used will be NEI VR: "See What I See" and "Versant Health Vision Simulator." In the first two stations, students will interact with standardized patients and have detailed group discussions. In the latter two stations, students will practice physical exam maneuvers, and interact with mobility assist devices and virtual reality simulation devices.

Evaluation Plan: Participant satisfaction and feedback will be tracked by the post-survey questionnaire. Participants will be asked to provide feedback through open-ended questions regarding the event's strengths, weaknesses, and recommendations for the future. Participants will also be asked to provide feedback on the effectiveness and impact of the student-led aspect of the workshop. Participant self-perception of knowledge, skills, and competence will be assessed before and after the intervention using a 5-point Likert Scale. Objective, multiple choice knowledge assessment questions on fall risk assessment, gait, and mobility assist devices will be used to gauge pre-intervention knowledge and workshop effectiveness. Participant interest in different fields of medicine, and working with older adults and people with disabilities will be assessed. Intervention effects on interest in future learning topics utilizing this format will also be assessed via a 5-point Likert scale.

Potential Impact: Within preclinical years of medical education, students have limited exposure to fall risk assessment components. If effective, this innovative student-led workshop could provide early exposure to these topics and increase interest in working with older adults and improve competency in fall risk assessment and gait and mobility analysis.

References:

- 1) Bergen G, Stevens MR, Burns ER. Falls and Fall Injuries Among Adults Aged ≥65 Years — United States, 2014. *MMWR Morb Mortal Wkly Rep* 2016;65:993–998. DOI: <http://dx.doi.org/10.15585/mmwr.mm6537a2external icon>.
- 2) Gillespie LD, Robertson MC, Gillespie WJ, et al. Interventions for preventing falls in older people living in the community. *Cochrane Database Syst Rev*. 2012;2012(9):CD007146. Published 2012 Sep 12. doi:10.1002/14651858.CD007146.pub3
- 3) van Rhyn B, Barwick A. Health Practitioners' Perceptions of Falls and Fall Prevention in Older People: A Metasynthesis. *Qualitative Health Research*. 2019;29(1):69-79. doi:10.1177/1049732318805753

Integrating Digital Health into a Pharmacy International Student Summer Program

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Problem Statement: To explore the integration of digital health and artificial intelligence in pharmacy education

Rationale: The fourth industrial revolution is a concept that describes the utilization of innovations in technology in production processes. Digital health is the utilization of technology and has increased access to medical care and improved clinical outcomes. It is necessary to educate healthcare students about the fundamentals of digital health, and their possible role in leading digital healthcare initiatives either in research, industry, drug development and clinical practice.^{1,2} In pharmacy education, there are calls to address the new possible career pathways and the lack of market job growth for pharmacists.³ The USC summer international program is a yearly event in which pharmacy students from all over the world complete a four week training program to learn about pharmaceutical sciences and pharmacy practice in the USA. This provided an opportunity to explore the integration of different concepts in digital health and artificial intelligence in a pharmacy classroom.

Methods: The international program in 2023 included 100 students from 9 countries and 23 universities. The program included a two-hour session on digital health and artificial intelligence (AI). The learning objectives were to define digital health and therapeutics; list different examples of digital health tools and their impact on patient care; list types of AI and machine learning; and list AI applications in healthcare. Prior to the session, the students completed a survey on their perspectives on digital health. During the session, the concepts of digital health and AI were introduced by providing key definitions in clinical decision support tools, digital therapeutics and machine learning. The different types of digital health and AI-tools that are utilized in patient care and research were discussed. The students were then asked to work in groups to solve four cases. The cases were staged in different settings. The cases include continuous glucose monitoring device in an ambulatory care setting, a digital inhaler in a community pharmacy setting, a digital product development exercise for an AI-powered application, and an exercise to identify a digital health tool that can be applicable to their country and population. After the session, the students completed another survey to measure the change in their perspectives on digital health.

Results: During the session, the students were engaged, and reviewed concepts related to diabetes, asthma exacerbation, product development, and resources to explore digital health tools. They also participated in role plays for patient education on digital therapeutics tools. A total of 90 students attended and 65 students completed the pre- and post-session surveys, respectively. The pre-session survey showed that students were already familiar with the concept of digital health by correctly identifying it as 'utilizing technology to improve patient care' (87/90; 96.7%). However, the session increased their knowledge on digital therapeutics by correctly identifying them as 'technology tools built based on best practice and has a positive impact on clinical outcomes' (pre vs post: 32.6% vs 42.9%). After the session, more students were also able to identify which type of machine learning is not utilized in patient care (pre vs post: 13.6% vs 29.7%). Overall, the session enhanced the interest in learning more about digital health (pre vs post: 77.8% vs 90.7%).

Potential Impact: This case based approach can be utilized in the classroom to enhance students' interest in digital health. They can utilize this knowledge to empower them to provide better patient care and pursue career pathways in the fields of digital health and artificial intelligence.

References:

- 1) Aungst, T. D., & Patel, R. (2020). Integrating digital health into the curriculum—considerations on the current landscape and future developments. *Journal of medical education and curricular development*, 7, 2382120519901275

- 2) D Aungst, T., Franzese, C., & Kim, Y. (2021). Digital health implications for clinical pharmacists services: A primer on the current landscape and future concerns. *Journal of the American College of Clinical Pharmacy*, 4(4), 514-524.
- 3) Papadopoulos, V., Goldman, D., Wang, C., Keller, M., & Chen, S. (2021). Looking ahead to 2030: Survey of evolving needs in pharmacy education. *Pharmacy*, 9(1), 59.

Team-Based Learning to Educate Medical Students on Dermatological Conditions in People of Color

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Problem Statement: Underrepresentation in Skin-of-Color dermatology medical school education contributes to healthcare disparities in People of Color.

Rationale: Research has overwhelmingly suggested that Team Based Learning (TBL) is an effective methodology of medical education. The inadequate representation of individuals with Skin of Color in dermatology education and practice has led to a critical need for action. The study aims to evaluate the effectiveness of a team-based approach in addressing this problem. The approach leverages existing curriculum materials, interactive activities, and small group discussions to improve the knowledge and skills of medical students in diagnosing dermatological conditions in People of Color.

Methods: A comprehensive curriculum was delivered that included small group discussion based on a case-study, didactic lecture utilizing, and a hands-on group activity. The curriculum was delivered to first year medical students at the California University of Science and Medicine. The session took place in a two hour College Colloquium Student learned session. The impact of the intervention on students' learning outcomes was assessed utilizing pre-intervention and post-intervention assessments, student feedback, and in-session quizzes.

Session Learning outcomes (SLOs) for the curriculum were as follows:

SLO1: To provide medical students with confidence in the identification of dermatological conditions in patients with varying skin tone.

SLO2: To address and bring awareness to discrepancies in medical education in terms of providing excellent care to patients of Color.

SLO3: To introduce/reintroduce the presence of systemic bias/oppression present in the medical field.

SLO4: To reinforce confidence in identifying dermatological conditions with hands-on activities.

Data was analyzed using Paired T-tests, descriptive statistics, and linear regression analysis was used for analytics of the data. Linear Regression analysis will be used to measure relationship between SLO's and baseline characteristics.

Results: The study involved 77 participating students and yielded substantial findings regarding their confidence levels and knowledge related to the identification of dermatological conditions across various skin tones. The intervention implemented during the study demonstrated remarkable improvements in these aspects, signifying the effectiveness of the educational approach. These significant improvements were especially prominent in relation to dermatological conditions on Skin of Color. Moreover, the reduction in the score discrepancy between pre-test and post-test scores for both light and dark skin tones was statistically significant ($p < 0.05$). The paired t-test results ($p < 0.001$) indicate a highly significant difference between the pre-test and the post test values. This finding suggests that the designed curriculum substantially enhanced students' competence in identifying dermatological conditions across different skin types. In conclusion, this study's results with specific p-values highlight the remarkable impact of educational intervention. It significantly boosted students' confidence and knowledge, particularly in the context of dermatological conditions on Skin of Color, contributing to more accurate diagnoses and fostering healthcare equity.

Potential Impact: The study's potential impact is significant, addressing SOC underrepresentation in dermatology to reduce healthcare disparities. The team-based approach, with positive results, can model

curriculum enhancements, enhancing medical professionals' competence in diagnosing conditions in SOC. The study's success may improve care and accurate diagnoses.

References:

- 1) Burgess A, Roberts C, Ayton T, Mellis C. Implementation of modified team-based learning within a problem based learning medical curriculum: A FOCUS Group Study. BMC Medical Education. 2018;18(1). doi:10.1186/s12909-018-1172-8
- 2) Syder NC, Omar D, McKenzie S, Brown-Korsah JB, Taylor SC, Elbuluk N. Gaps in medical education curricula on skin of color in medical school, residency, and beyond: Part 1. Journal of the American Academy of Dermatology. 2023;89(5):885-892. doi:10.1016/j.jaad.2022.03.053
- 3) Omar D, Syder N, Brown-Korsah JB, McKenzie S, Elbuluk N, Taylor S. Racial and ethnic disparities in clinical research and the Dermatology Workforce: Part 2. Journal of the American Academy of Dermatology. 2023;89(5):895-902. doi:10.1016/j.jaad.2022.03.052

Utilization of Podcasting as a Medium for Efficient On-The-Go Content Review

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Idea: An assessment was conducted among the TTUHSC School of Medicine Class of 2026. Results revealed a strong desire for educational podcasts.

Need: A comprehensive needs assessment was conducted among the Texas Tech University Health Sciences Center (TTUHSC) School of Medicine class of 2026 during spring 2023. The questionnaire gauged students' interest in educational podcasts and included the following questions: if they at any point during their medical school experience felt like engaging in activities that benefited their overall health because they weren't studying were a waste of time, if a podcast during their first year would have been helpful to them, and if so, what topics would have been useful. Out of 61 participants, over 50% expressed a strong desire for a podcast as an additional learning resource to support their studies in anatomy, histology, embryology (AHE), and general principles (GPX) which includes an introduction to biochemistry, genetics, pharmacology, and microbiology. Over 70 % of students agreed with the statement that they were wasting time when not studying. Based on the results of the needs analysis, a podcast series was developed that would span the first two blocks of the curriculum and address topics that first-year medical students identified as valuable.

Methods: For this project, the targeted learners are the current first-year medical students (Class of 2027). The initial episode within the AHE block was to introduce students to what they could expect during their first block of medical school. Subsequent episodes covered high-yield clinical correlate topics for each unit that students could listen to while performing other activities such as working out or other parts of their daily routine. Overall, the AHE series consisted of four episodes, including the introductory episode, and three clinical correlate episodes, each closely aligned with specific units in the AHE curriculum. Content for clinical correlate episodes was based on topics that were heavily emphasized during AHE lectures and lab sessions. Each podcast episode was delivered to students a week before the respective exam to provide ample time to review the lectures and use the project as a supplemental learning tool. For the upcoming GPX podcast series, topics including vitamins, antibiotics, and medical genetics will be included as they were deemed most useful by the previous cohort of first-year medical students (Class of 2026).

Evaluation Plan: Questions regarding the usefulness of this resource during the AHE block will be included in an end-of-block questionnaire that is mandatory for all students to complete. This questionnaire aims to gather specific insights into how many students utilized the resource, the effectiveness of the podcast, if students are likely to recommend the podcast to other students, if there were any additional topics, they would have liked to see covered, and other additional comments. So far, preliminary feedback regarding the podcasts has been encouraging. Examples include positive feedback in midblock teaching assistant evaluations, highlighting the beneficial influence of the podcast on study habits and daily routines as well as personal communications. Similar methods of project evaluation will be utilized following the upcoming GPX block.

Potential Impact: Anecdotally, students have reported numerous positive outcomes from utilizing the podcast series. These early indications suggest that the podcast-based approach not only enhances review of material but also contributes to a healthier work-life balance for students and supports students' overall well-being.

References:

1) Cho, D., Cosimini, M., & Espinoza, J. (2017). Podcasting in medical education: A review of the literature. *Korean Journal of Medical Education*, 29(4), 229-239. <https://doi.org/10.3946/kjme.2017.69>

- 2) Christin Bergmann, Thomas Muth & Adrian Loerbroks (2019) Medical students' perceptions of stress due to academic studies and its interrelationships with other domains of life: a qualitative study, *Medical Education Online*, 24:1, DOI: 10.1080/10872981.2019.1603526
- 3) Berk, J., Trivedi, S.P., Watto, M. et al. Medical Education Podcasts: Where We Are and Questions Unanswered. *J GEN INTERN MED* 35, 2176–2178 (2020). <https://doi.org/10.1007/s11606-019-05606-2>

Outcomes of a Year 3 Novel Biotechnology Curriculum for Medical Students

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Problem Statement: Medical students nationwide have limited opportunities to engage in real-world medical device ideation, testing, and launch.

Rationale: In the 2022-2023 academic year, 96,520 students enrolled in M.D. programs in the United States with only 6,005 (6.2%) enrolled in the Medical Scientist Training Program (MSTP).¹ Apart from MSTP and MD/MBA tracks, there are limited opportunities for medical students to explore areas such as medical device development, regulatory affairs, and product launch. To address this gap, medical school programs can partner with medical technology (MedTech) accelerators or incubators, introducing students to new career paths and providing hands-on experience in biotechnology innovation. Keck Translational Biotechnology Association (TBA) collaborated with the Consortium for Technology & Innovation in Pediatrics (CTIP) for its third year with an emphasis on integrating students' interest in research and publication with opportunities to explore the biotechnology industry.

Methods: In fall 2020, CTIP and the Keck TBA launched an internship program (CTIPxTBA) for medical students at the USC Keck School of Medicine. CTIP is an FDA-funded pediatric medical device accelerator² established in 2011 with over 100 companies that the interns could pair with for the internship. Now in the third year of the program, students' interests were evaluated and they were paired with company founders in December. Founders and interns created a project and a list of deliverables for the duration of the program. Interns completed a capstone presentation at the end of the program period which consisted of an oral presentation in June. Students provided program feedback via survey at the end of the program period.

Changes from the first year of the program to this year are as follows: 1) Scaling up student program participation to more than double that of previous years 2) Advancing timeline to allow more time for students to make meaningful project contributions, 3) Increased availability of projects and companies, 4) Increased feedback frequency from interns, 5) Emphasized student and founder expectations at the start of the program. The program has grown year to year, rising from 6 interns in 2021, 7 interns in 2022, and 15 interns in 2023. This year, we report feedback from 15 out of 15 interns and compare changes in student experience and MedTech involvement from the prior two years of the program.

Results: Fifteen students were paired with 7 companies, which ranged from pediatric cardiology to neurosurgery, and completed a variety of projects, including database construction, clinical data analysis, and user satisfaction. Student program satisfaction and outcomes were compared with prior years to identify areas of improvement. Average student rating of the overall program experience this year was a 3.8 out of 5, an increase from 3.1 and 3.5 from the previous two years. The highest scoring category was this program's influence on student desire to pursue other opportunities working in MedTech, rated as a 3.7 out of 5. The greatest improvement seen was the average rating of students' perspectives on how much their experience impacted their thoughts on their future career, which increased to 3.6 out of 5 from 2.6 out of 5 last year. On average, students spent 39.25 hours on their project throughout the course of the program. Students that submitted abstracts or manuscripts had a higher average program satisfaction (5 out of 5) compared to those that did not (3.6 out of 5). Three students suggested that improving the quantity and quality of portfolio company projects would increase their experience. Three other students indicated that clear expectations between students and companies would help students achieve their goals. One student stated that CTIPxTBA should encourage portfolio companies to help students produce abstracts, in turn providing value to students and companies.

Potential Impact: The internship continues to provide medical students with meaningful opportunities to engage in MedTech. Student feedback provided improvements to the program, including an evaluation of student interests to facilitate a better founder-intern pairing. Other medical schools can adopt this model to bolster MedTech engagement among their student body.

References:

- 1) "2022 FACTS: Enrollment, Graduates, and MD-PhD Data." AAMC, www.aamc.org/data-reports/students-residents/data/2022-facts-enrollment-graduates-and-md-phd-data. Accessed 27 Sept. 2023.
- 2) CTIP | Pediatric MedTech Accelerator. (n.d.). www.westcoastctip.org. Retrieved September 28, 2023, from <https://www.westcoastctip.org/>

Anaphylaxis Curriculum in the Pediatric Clinic: Instilling Knowledge and Confidence

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Idea: Training medical students and residents on the evaluation and treatment of acute pediatric anaphylaxis through a two-session curriculum.

Need: The frequency of pediatric medical emergencies in the outpatient setting is often underestimated, thus providers are often under-prepared for them. One study showed that 62% of pediatricians managed more than one urgent medical issue per week in the clinic (2), yet half of pediatrician respondents in another study felt unprepared to manage the most commonly experienced outpatient emergencies (1). This discrepancy between pediatrician preparedness and the need for appropriate management of medical emergencies in the outpatient setting indicates there is an educational gap among pediatric providers. The prevalence of anaphylaxis among children is on the rise, and can be triggered in the clinic by medication or vaccination administration. Since dedicated training on the treatment of acute anaphylaxis in the outpatient setting is scarcely provided, we developed a curriculum utilizing an established anaphylaxis teaching program. Our curriculum aims to increase the medical knowledge and clinical confidence of medical students and residents in the assessment and treatment of pediatric anaphylaxis, to ultimately prepare them to successfully treat an anaphylactic child in their own future practice.

Methods: The curriculum consists of two sessions completed by medical students and residents during their pediatric rotation: 1) The first session is a lecture presentation on the recognition and management of acute pediatric anaphylaxis. 2) The second session occurs on a later day in the pediatric clinic and consists of a simulation case of a pediatric patient presenting with acute anaphylaxis. Both the lecture and the simulation case are derived from the anaphylaxis teaching program produced by Sanseau E, et al (3). The participants in the curriculum additionally complete a pre-test and post-test prior to and after each of the two sessions. The pre-test and post-test for the lecture presentation include medical knowledge questions on the treatment of anaphylaxis in addition to clinical confidence questions assessing the participants' confidence in various aspects of the diagnosis and treatment of anaphylaxis. The pre-test and post-test for the simulation case consist solely of clinical confidence questions assessing the participants' confidence in the clinical recognition and treatment of anaphylaxis in addition to their knowledge on the location of supplies in the clinic. 3) After completion of both sessions, the participants are then administered a final repeat test several months to one year after completion of the two sessions to assess longitudinal retention of medical knowledge and clinical confidence as a result of completion of the curriculum.

Evaluation Plan: To assess whether completion of the curriculum increases medical knowledge and clinical confidence in the participants, the pre-test results of the lecture presentation and simulation case will be compared to their respective post-test results. These results will then be statistically analyzed to assess for statistical significance and to isolate potential confounders. The data will additionally be analyzed to determine whether the acquisition of medical knowledge and clinical confidence was superior from either the lecture presentation or the simulation case. Finally, the post-test results from both sessions will be compared to the final repeat test results to assess the longitudinal retention of medical knowledge and clinical confidence from this curriculum.

Preliminary data obtained thus far from two completed curriculums with 42 participants has shown increased medical knowledge and clinical confidence in all domains following both sessions, however statistical significance and comparison between the two session types is yet to be completed. The data from the final repeat test is currently being collected.

Potential Impact: This curriculum serves to fulfill the need for the training of pediatric providers on the correct evaluation and management of acute anaphylaxis in the clinic setting. If effective, this curriculum

can be implemented for all subsequent cohorts of medical students and residents completing their pediatric rotations at our institution.

References:

- 1) Altieri M, Bellet J, Scott H. Preparedness for pediatric emergencies encountered in the practitioner's office. *Pediatrics*. 1990;85(5):710-714.
- 2) Fuchs S, Jaffe DM, Christoffel KK. Pediatric emergencies in office practices: prevalence and office preparedness. *Pediatrics*. 1989;83(6):931-939.
- 3) Sanseau E, Reid J, Stone K, Burns R, Uspal N. Pediatric simulation cases for primary care providers: asthma, anaphylaxis, seizure in the office. *MedEdPORTAL*. 2018;14:10762.

Improved Plasma Transfusion Knowledge Through Unique Transfusion Committee of Residents and Fellows

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Idea: Formation of a resident and fellow Transfusion Committee to improve plasma transfusion.

Need: Plasma has been commonly transfused to lower international normalized ratio (INR) values in non-emergent situations and prophylactically prior to procedures, though several studies have shown that most transfusions may be not clinically indicated due to frequent misunderstanding of the effects of plasma transfusion. The reason for inappropriately transfusing plasma may be due to lack of knowledge regarding the role of plasma and its effects on INR. Residents receive minimal mandatory education during their medical school training regarding transfusion practices.

A recent study by Badawi et al. (2023) evaluated plasma utilization and wastage before and after administering a brief survey to evaluate participant knowledge about the need for plasma transfusion, and monthly plasma transfusion rates decreased after the intervention. Therefore, teaching residents during training may be beneficial to decrease unnecessary plasma transfusions and ultimately improve patient outcomes. Often, educational opportunities are specialty-specific and limited in scope. To create an environment of intradisciplinary communication for hospital-wide education, a committee dedicated to transfusion practices may assist with these learning objectives.

Methods: The formation of a Transfusion Committee consisting of residents and fellows is hypothesized to improve this education intervention. Over a period of 4 months, the Transfusion Committee members would learn and formulate a teaching seminar for their peers of medical residents and fellows at the University of Arizona College of Medicine – Tucson working at the Banner University Medical Center Main Campus in Tucson, Arizona with a pretest-posttest design to measure the degree of change from the intervention. Attendings and non-physician health care specialists will be excluded from the data, but will be taught or refreshed in current literature if they wish.

Initial pre-intervention surveys will be conducted via SurveyMonkey to assess plasma knowledge to the residents/fellows among the different specialties. A QR code will be presented to the trainee groups at the beginning of each session. A paired sample t-test will be performed to compare the mean difference between the 4 months of educational focus.

The goals of the project are four-fold: 1) to educate residents and fellows about plasma transfusion, a commonly misunderstood blood product, 2) to increase involvement of the resident-fellow Transfusion Committee in order to cultivate intradepartmental communication and comradery, 3) to reduce overtransfusion in certain patient populations, such as those with cirrhosis, and 4) to provide opportunities for residents to fulfill Quality Improvement projects, which are required.

Evaluation Plan: Evaluation will occur using pre- and post-surveys, presenting interactive lectures where educational information including scholarly papers will be provided, and assessing transfusion practices in the hospital through a patient blood management dashboards. Prior to the educational intervention, medical residents and fellows in the various medical specialties (pediatrics, internal medicine, emergency medicine, general surgery, pulmonary critical care medicine, anesthesiology, hematology-oncology, and OBGYN) will be prompted to complete a brief survey to assess the perceived utility and effects of plasma transfusion. These survey results will inform the Transfusion Committee (composed of approximately 30 residents of varying specialties at the University of Arizona College of Medicine – Tucson) of the prior knowledge these trainees have in regard to plasma transfusion. Educational lectures and papers will be provided to these trainees at that time. Periodic e-mails will be sent by the Transfusion Committee to provide more information during the length of the project. Post-test surveys at a final educational session will quantify knowledge improvement after the educational intervention.

Potential Impact: The project will provide an educational intervention with the aim of improving knowledge regarding plasma transfusions and decreasing ordering practices that do not follow guidelines and therefore benefit the patient. Transfusion Committee participants will gain knowledge and assist other providers with improved transfusion practices.

References:

- 1) Triulzi, D, Gottschall, J, Murphy, E. et al. A multicenter study of plasma use in the United States. *Transfusion*. 2015;55(6):1313-1312. doi:10.1111/trf.12970
- 2) Badawi MA, Algiraigri A, Al-Sulami AJ, et al. A Multifaceted Educational Intervention to Reduce Plasma Utilization. *Plasmatology*. 2023;17. doi:10.1177/26348535231177667

Multi-Disciplinary Collaboration for Neonatal Intensive Care Education (Nice) Quality Improvement

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Idea: Multidisciplinary topic-based subcommittees can enhance effectiveness of neonatal-perinatal medicine fellowship education and ensure sustainability.

Need: Neonatal-Perinatal Medicine (NPM) practices nation-wide are performing fewer procedures, caring for more complex patient population, and shifting towards regionalization of specialized care, which threaten fellowship education quality and readiness of future neonatologists (1,2). At USC Los Angeles General Medical Center (LAGMC), our needs assessment survey indicates that fellows are neutrally satisfied with the overall education and there is a particular need for a more structured and targeted fellowship core curriculum. The original fellowship education organizational structure is top-down and relies on the education chief fellow to reach out to individual educators to deliver lectures, coordinate, and troubleshoot scheduling issues. This model has limitations including not involving content experts in the curriculum planning, limited interaction between educators involving with other aspects of fellowship education and overburdening of clerical responsibility on the educational chief fellow. Our new approach is to establish topic-based Neonatal Intensive Care Education (NICE) subcommittees to develop more robust NPM curriculum and ensure its sustainability.

Methods: We have conducted a needs assessment of 18 NPM fellows in May 2023 via REDCap at our institution to elicit their perspective on the core curriculum and define its mission, goals, and methodology. We have formed a NICE committee involving the program director, director of fellowship education, site director, education chief fellow, and interested faculty and fellows to oversee curriculum implementation, assessment, quality improvement, and communication. We have also formed content-specific NICE subcommittees involving neonatal fellows/faculty, pediatric sub-specialists, and allied health representatives from both LAGMC and Children's Hospital Los Angeles (CHLA). The subcommittees are organized around content categories defined by the American Board of Pediatrics' NPM content outline. Additional subcommittees are formed based on needs such as point-of-care ultrasound.

The NICE subcommittees meet virtually to prioritize the NPM content, discuss implementation plan, delegate responsibilities, and schedule the educational sessions. The subcommittee members develop the content including didactics, skill workshops, and Board-style questions. The education chief fellow writes monthly NPM fellowship education newsletters and collates data for quality improvement. Fellows vote on "Most Effective Educator" faculty award and the "Best Fellow Presentation" fellow award monthly. Award winners receive signed certificates with gift cards and are recognized in the newsletter.

Evaluation Plan: We aim to assess effectiveness of the intervention on changes to attitude, knowledge, and behavior. Fellows fill out an evaluation of each educational session. The fellows' perception of the curriculum quality is assessed monthly via quantitative survey using 9-question 5-point Likert scale questionnaire. Pre/post knowledge test is assessed at the beginning and at the conclusion of each topic-based block. Changes to behavior including attendance, evaluation completion, and knowledge test completion are monitored throughout. To create a balanced curriculum, fellows' level of burnout is also assessed quarterly with Copenhagen Burnout Inventory (CBI). All surveys are anonymous, and survey completion is incentivized with gift card raffles. At the program-level, the annual results of the ACGME survey and the Subspecialty In-Training Exam (SITE) score are included to assess changes to attitude and knowledge. Data analysis is performed using Microsoft Excel.

We have received a grant support from the Committee of Interns and Residents' Quality Improvement fund for survey implementation, awards, educational resources, supplies and video conferencing system. This study is also approved by our IRB.

Potential Impact: The quality of an education program depends on having a strong organizational structure. Our preliminary data show that fellows' education experience has improved with this new structure. This may provide an organizational model for NPM fellowship education that is effective, accountable, and sustainable.

References:

- 1) Johnston LC, Gray MM, French H. Optimizing neonatal patient care begins with education: strategies to build comprehensive and effective NPM fellowship programs. *J Perinatol.* 2022 Feb;42(2):155-156. doi: 10.1038/s41372-022-01316-6. Epub 2022 Jan 13. PMID: 35027652.
- 2) Cicalese E, Wraight CL, Falck AJ, Izatt SD, Nair J; ONTPD Fellowship Directors Writing Group; Lawrence KG. Essentials of Neonatal-Perinatal Medicine fellowship: part 2 - clinical education and experience. *J Perinatol.* 2022 Mar;42(3):410-415. doi: 10.1038/s41372-021-01042-5. Epub 2021 Apr 13. PMID: 33850281.

Asynchronous Faculty- Fellow Scheduling for Professional Identity Formation and Evaluation (Aspire)

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Idea: A clinical schedule to improve pulmonary and critical care fellows' professional identity formation through professional socialization and feedback.

Need: Professional identity formation (PIF) in training occurs through the dynamic interaction of individual, relational and collective identities within a community of practice(1). The shaping influence of faculty role models - their attitudes towards clinical uncertainty and moral ambiguity in addition to clinical decision making are valuable for trainees(1). Through the lens of identity formation theory, Multisource Feedback (MSF) of trainees has shown to influence this process but often continues to be inadequate in quantity and or quality (2). McQueen et al examined the barriers to meaningful assessment and feedback in medical training and suggested implementation of more frequent assessments as one of the ways to normalize and improve feedback (3). In many programs, numerous scheduling factors preclude trainees from working with most faculty in the clinical setting. In our division, review of schedules and feedback data showed that graduating fellows worked with less than 50% of the clinical faculty prior to graduating, with feedback from less than 50% of those interactions .We aspire to improve professional socialization and MSF and thereby PIF in pulmonary and critical care fellows through a novel scheduling strategy.

Methods: A pre-intervention survey will be obtained from the fellows who have had at least one year of the traditional synchronous schedule where they are paired for a two week clinical block with an attending physician (second and third year fellows -14 fellows total). The number of faculty members each trainee has worked with in the past year will be obtained from the master schedule.

Survey data will include trainees impressions regarding:

- i) the impact on patient care and workflow while transitioning from one attending to another,
- ii) the duration of contact with the attending and quality of feedback received and
- iii) the ability to evaluate the faculty regarding clinical care, mentorship, professionalism and teaching.

The intervention, the asynchronous schedule, will still have fellows and faculty doing two weeks at a time, but the faculty schedule switch would be asynchronous with the fellows resulting in the fellows working with two faculty members in a two week period and vice versa. Currently used evaluation forms will be generated as usual. Follow up surveys will be completed after a year on the new schedule . Faculty will also be asked to comment on their ability to fairly evaluate fellows before and after the intervention through a separate survey.

The number of handoffs between providers will remain unchanged, and continuity of care might not be impacted because one person on the team (fellow or faculty) has always known the patients for a week longer than the other.

Evaluation Plan: The pre and post intervention survey data will be de-identified but paired so that the individual and group reactions to the intervention can be ascertained.

The results will be reviewed after completion of a year of the asynchronous schedule.

Accountability : The schedule will be made in advance. Since there is no additional work for the fellows and faculty , the division has approved the intervention.

Reaction : The post intervention reaction will be assessed as a part of the post intervention survey.

Learning: Trainees will share their ability to evaluate the attending physicians' clinical care, mentorship, professionalism and teaching during their period of contact. Feedback and evaluation volume pre and post intervention will also be compared.

Behavior: Confidence in their professional identity at the time of graduation. Fellows will be asked for a written reflection of the experience after completion of the intervention.

Results (Patient impact): Hospital reportable data such as patients' length of stay, duration on the ventilator, infection rates will be used as a surrogate to measure impact on patient care.

Potential Impact: The ability to observe, work with and receive feedback from multiple faculty members in different clinical settings may enhance the process of professional identity formation in trainees, irrespective of speciality. It will increase the opportunity for more faculty on evaluation committees to have first hand experience with the trainees.

References:

- 1) Chandran L, Iuli RJ, Strano-Paul L, Post SG. Developing "a Way of Being": Deliberate Approaches to Professional Identity Formation in Medical Education. *Acad Psychiatry*. 2019 Oct;43(5):521-527.
- 2) Hennel EK, Trachsel A, Subotic U, Lörwald AC, Harendza S, Huwendiek S. How does multisource feedback influence residency training? A qualitative case study. *Med Educ*. 2022 Jun;56(6):660-669
- 3) McQueen SA, Petrisor B, Bhandari M, Fahim C, McKinnon V, Sonnadara RR. Examining the barriers to meaningful assessment and feedback in medical training. *Am J Surg*. 2016 Feb;211(2):464-75.

A Regionally Based Wilderness Medicine Lecture Series for an Emergency Medicine Residency

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Idea: Implementing a wilderness medicine elective for Emergency Medicine residents with lecture topics divided into regionally-based environmental hazards.

Need: Wilderness medicine is a rapidly growing field, and with national and state parks becoming more popular in recent years, the need for persons trained in this area is increasing. While physicians training in emergency and family medicine have the option to do this career path as a fellowship, most physicians will not have training in managing critical patients in remote and austere environments. Furthermore, the geographic location of practitioners' residencies will limit the number of certain environmental emergencies they are exposed to. When practicing in a new geographic area, more common environmental emergencies in that climate may be mismanaged by practitioners with limited experience with such conditions. By implementing a regionally based wilderness curriculum covering different emergent medical conditions encountered in different climates, a resident can achieve a more rounded learning experience suitable for a wider area of medical practice.

Methods: We are developing a curriculum that focuses on environmental dangers including stings and bites, traumatic injuries, natural disasters (i.e. fires, hurricanes, tornados), infections, heat and cold-related injury, and dysbarism. Each lecture will be subdivided such that focus on specific regional concerns will be highlighted. Regions included are coastal, mountainous, desert, swamp/wetlands, and great plains with an additional general category for wilderness and environmental medicine that is applicable to most or all regions. With this design, residency programs can choose what extra topics to teach based on what their residents are exposed to in their area.

Evaluation Plan: We will evaluate our curriculum's impact on learners, employing levels 2A and 2B of Kilpatrick's Levels of Evaluation. Surveys will include qualitative and quantitative questions assessing resident's knowledge and comfort with wilderness topics before and after the implementation of the lectures. Furthermore, simulations based on possible environmental hazards will be used to assess residents' abilities to apply teachings to a practical scenario.

Potential Impact: This curriculum will include information specifically tailored to different regional environmental medical concerns across the United States. Implementation of the lectures into a residency's educational program should serve to broaden the medical knowledge of the learners with topics that are otherwise not seen in their geographic region.

References:

- 1) Sward, Douglas G, and Brad L Bennett. "Wilderness medicine." *World journal of emergency medicine* vol. 5,1 (2014): 5-15. doi:10.5847/wjem.j.issn.1920-8642.2014.01.001
- 2) Schradling, Walter A et al. "Core Content for Wilderness Medicine Training: Development of a Wilderness Medicine Track Within an Emergency Medicine Residency." *Wilderness & environmental medicine* vol. 29,1 (2018): 78-84. doi:10.1016/j.wem.2017.10.003
- 3) Kern, David E. and Patricia A. Thomas, Donna M. Howard, Eric B. Bass. *Curriculum Development For Medical Education: A Six-Step Approach*. Johns Hopkins University Press: Baltimore and London, 2006.

Enhancing Resident Implicit Bias Education Through Bystander Intervention Training

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Problem Statement: Residency programs should develop curriculums to train their residents in diversity, equity, and inclusion, including implicit bias education.

Rationale: Previous studies have demonstrated that the high pressure and stressful health care setting from increased workload and challenging interpersonal interactions can lead to activation of implicit bias. Residency programs have historically focused on medical therapies and are now recognizing the value of incorporating education on implicit bias and fostering a culture of diversity and inclusion. Although lectures and modules can provide a surface level understanding of the problem, the literature suggests that offering avenues for identification of implicit biases and self-reflection can improve self-monitoring and reduce the potential impact of implicit bias. The UCI IM Residency Program recently implemented a professional bystander intervention workshop to train its residents in how to approach these difficult situations. The workshop also served as a platform to discuss additional topics, such as gender identity, race, and disability, by promoting a supportive and safe environment.

Methods: During the annual PGY-1 to PGY-2 retreat, internal medicine residents participated in a bystander intervention training facilitated by Pure Praxis. Pure Praxis is a performance education company that employs a team of experienced performance facilitators and actor-advocates to run interactive and thought-provoking workshops for employee development. For our program, Pure Praxis utilized real-life scenarios to simulate common types of implicit bias that occur within the hospital. Residents had an opportunity to approach these scenarios with coaching in order to successfully address challenging and sensitive situations. In doing so, residents were empowered and encouraged to implement these skills in their day-to-day interactions with patients and colleagues.

A total of 26 residents participated in the workshop. Post-intervention surveys were given within one day after the training session to ensure maximal response. Post surveys were comprised of 5 questions that utilized a Likert scale. The questionnaire assessed the resident's perceived level of importance of the bystander training in improving exposure to diversity, equity, inclusion and implicit bias in their residency training, determined a resident's ability and comfort in implementing bystander interventions in the future, and their overall sentiment towards the training. Residents were also able to provide general feedback and comments regarding the training session.

Results: Between 2021-2022, a total of 17 post survey responses were collected. 84.2% of residents felt that the bystander intervention workshops improved their exposure to DEI and implicit bias. 94.1% of residents felt that they were better able to support their colleagues after engaging in the workshop. 94.1% of residents felt they would be more likely to speak up in cases of implicit bias after going through the workshop. 88.2% of residents agreed that a bystander intervention workshop should be implemented within residency training. 94.1% of residents were overall satisfied with the training experience. Residents noted that the most valuable aspects of the training were the "interactive scenarios" that "were applicable to real life" and the ability to "watch others manage difficult situations." They were encouraged from their experiences in "speaking up to troubling comments" within the workplace. Resident feedback regarding planning for future sessions included "seeing even more various and different scenarios".

Potential Impact: Medical residents function as the main doctor for many hospitalized patients and coordinate care between ancillary staff and other providers. Active bystander training equips residents with tools and strategies needed to confront instances of discrimination and harassment they may come across in their practice.

References:

- 1) Aitken D, Shamaz H, Panchdhari A, et al. Twelve tips for developing active bystander intervention training for medical students. *Med Teach*. 2023;45(8):822-829. doi:10.1080/0142159X.2023.2207723
- 2) Boscardin CK. Reducing Implicit Bias Through Curricular Interventions. *J Gen Intern Med*. 2015 Dec;30(12):1726-8. doi: 10.1007/s11606-015-3496-y. PMID: 26311199; PMCID: PMC4636582.

Community Outreach as a Core Component in Medical Education: A Two-Year Pilot Initiative

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Medical College of Wisconsin (all except Fairbanks whom is Advocate Aurora Health)

Idea: This study will analyze novel resident physician curriculum addressing health inequities through informed, effective, and compassionate patient care.

Need: Resident trainees within the Medical College of Wisconsin Affiliated Hospitals (MCWAH) provide a large percentage of patient-facing care. Many of MCWAH's residents are not from Milwaukee, which may create barriers between trainee physicians and patients on a cultural and social level. Milwaukee is unique in its racial and ethnic history, and remains highly segregated, which perpetuates systemic racial inequalities. A lack of accessible healthcare, food insecurity, eviction, and homelessness disproportionately impact people of color and low-income communities. Trainees can better serve their community if thoughtfully exposed to these issues. We propose that the institution provide first-year trainees with dedicated professional development time focusing on community engagement and implicit bias in healthcare. We hypothesize that such a curriculum will help develop more informed, self-aware, and engaged physicians who are better equipped to provide holistic care to patients, particularly those at risk of experiencing healthcare disparities. We also aim to partner with community organizations in Southeastern Wisconsin to create long-lasting and mutually beneficial relationships focused around reducing health and social inequities.

Methods: We have initiated a two-year a pilot study focused on first year trainees during academic years (AY) 2023 and 2024 and data collection are in progress. In AY23, we enrolled 40 trainees in their first year of training with Anesthesiology, Surgery, Obstetrics and Gynecology, Radiation Oncology, and Neurology. During AY24 we also are enrolling from Psychiatry, Internal Medicine, and Diagnostic Radiology training programs, comprising a total anticipated enrollment of around 100 trainees. Participating trainees receive dedicated time to participate in five half days of curriculum: three half days of didactics/reflection and two half days of community outreach with community partners. During the didactic days, trainees will participate in lecture and workshop-style content, including a history of Milwaukee and racism, implicit bias and how to identify it, understanding microaggressions, cultural competence with diverse populations, and reflections on how to develop a community-engaged healthcare practice, no matter the individual specialty. Community outreach experiences include going out to community sites, learning about the work of the organizations and the communities they serve, while participating in volunteer efforts with the organization. Community partners in AY23 included StreetLife Communities and All Saints Community Garden, and in AY24, we will further include a local food bank and community center.

Evaluation Plan: Trainees participate in this study across one academic year and are recruited in their initial year of training in their program. Once recruited, trainees complete pre-test surveys before beginning the curriculum, including modified versions of the Bonham RACE Scale, National Opinion Survey on Health and Health Disparities, and the Resident Wellness Scale. As a measure for baseline of implicit bias, participants also complete a Harvard Implicit Association Test for race and gender in career. During the year, after each outreach and half-day curriculum, trainees complete Likert scale and descriptive survey questions documenting their perception of the experience. At the end of the AY, trainees are then asked to complete the Bonham RACE Scale, National Opinion Survey on Health and Health Disparities Survey, and Resident Wellness Scale once more as a post-test. At the end of our two-year pilot, we will compare pre-test and post-test survey results, as well as surveys across the experience to determine how scores have changed by year and specialty. At the end of this pilot, we also have developed a survey to request perception of logistics regarding the overall experience from our community partners and program directors.

Potential Impact: We believe this curriculum provides physicians in training with experiences and education that can improve their understanding of the patients they serve, increase awareness of biases, and foster connections with at-risk communities. Trainee physicians empowered with tools to improve patient care can advocate for equitable healthcare policies.

References:

- 1) Vogt KM, Citro AT, et al. Early immersion in a dedicated one-month Anesthesiology Professional Practice rotation for Post-Graduate Year-1 interns is associated with an increase in scholarly activity during residency. *Journal of Clinical Anesthesia*. 2022(76) 110566.
- 2) Gonzalez CM, Kim MY, Marantz PR. Implicit bias and its relation to health disparities: a teaching program and survey of medical students. *Teach Learn Med*. 2014;26(1):64-71. doi: 10.1080/10401334.2013.857341. PMID: 24405348.
- 3) Bonham VL, Sellers SL, Woolford S. Physicians' knowledge, beliefs, and use of race and human genetic variation: new measures and insights. *BMC Health Serv Res*. 2014 Oct 2;14:456. doi: 10.1186/1472-6963-14-456. PMID: 25277068; PMCID: PMC4283084.

Equity, Diversity, and Inclusion Topics at a Medical Physics Residency Journal Club

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Idea: A medical physics residency journal club session was designed centering topics related to equity, diversity, and inclusion (EDI).

Need: Journal clubs in medical education frequently focus on evidence-based articles. Journal clubs within medical physics residencies tend to evaluate clinical, technical, and scientific research. There are currently no published accounts of EDI-based journal clubs in medical physics, radiation oncology, or medical oncology. A journal club session devoted to EDI can showcase that these topics can be studied in a rigorous way. These types of sessions introduce both faculty and trainees to the wide and growing array of available peer-reviewed literature.

As discussed by professional organizations including the American Association of Physicists in Medicine (AAPM), American Board of Radiology (ABR), Accreditation Council for Graduate Medical Education (ACGME), and American Society for Radiation Oncology (ASTRO), EDI are important topics in professional medical education. Based on the critical need to increase equitable opportunities and workforce diversity and inclusion within the medical physics profession, a session of an accredited medical physics residency journal club was dedicated to examining scholarship based on EDI and applying it to current practice.

Methods: As previously published (1), a journal club program was initiated in a clinically focused medical physics therapy residency program. This program currently supports two residents at different clinical sites, who regularly present at the new journal club. For one of the sessions, residents were assigned to present on topics related to the broad themes of EDI in the context of medical physics, radiation oncology, or medical oncology. As in other journal club sessions, residents were responsible for choosing their respective articles within required criteria and with approval from the program director. The session was executed in late 2022, with both residents leading and facilitating discussion for the residents, the residency program director, and all residency faculty members. Four recent, peer-reviewed journal articles were presented, with discussion led by residents.

It is noted that the broad range of publications that could be used to explore EDI topics cover an extensive scope of problems. As noted by Ponce et al. (3), these are all important—yet unique—subjects. Journal club leaders should not expect a single journal club session to address all of these topics thoroughly, but instead, journal clubs may elect to hold multiple sessions over time devoted to themes in EDI.

This work relied on the theoretical framework of communities of practice, which has been applied to education scholarship in many contexts, including medical and health care education (2).

Evaluation Plan: Residents and faculty agreed that the journal club session aligned with the learning objectives:

1. Residents will improve in professional scientific presentation skills and critical analysis of scientific, peer-reviewed literature.
2. Journal club members will better understand challenges faced by people of different identities, including those related to race, ethnicity, culture, gender, age, sexual orientation, ability, religion, economic status, language, national origin, and other backgrounds within the context of medical oncology, radiation oncology, and medical physics.
3. The EDI journal club session will promote discussion about applying EDI topics in professional settings.

Residents evaluated statements using a 5-point Likert scaling, with 1 indicating strongly disagree, 2 disagree, 3 neither agree nor disagree, 4 agree, and 5 strongly agree. The mean scores for the following statements “I found the EDI journal club session personally valuable,” “I had the opportunity share my views on my chosen articles,” “Discussing EDI topics can be useful in the context of medical physics residency,” and “I had sufficient time to examine my chosen articles to the extent I wanted” were 4.5, 5.0, 5.0, and 4.5, respectively.

Potential Impact: Exploring topics in EDI within the context of a residency journal club offers a complementary perspective on the discipline of medical physics to the usually technical topics explored in journal club sessions. Highlighting these issues through a journal club can be used to increase awareness of EDI issues, by critiquing evidence-based work.

References:

- 1) Fagerstrom JM, Windsor C, Zaks D. Equity, diversity, and inclusion topics at a medical physics residency journal club. *J Appl Clin Med Phys*. 2023; 24(9):e14126. doi: 10.1002/acm2.14126
- 2) le May A. Chapter 1: introducing communities of practice. In: A May, ed. *Communities of Practice in Health and Social Care*. Wiley-Blackwell Pub; 2009: 3-16.
- 3) LaVigne AW, DeWeese TL, Wright JL, Deville C, Yegnasubramanian S, Alcorn SR. Radiotherapy deserts: impact of race, poverty and the rural-urban continuum on density of providers and utilization of radiotherapy in the United States. *Int J Radiat Oncol Biol Phys*. 2023; 116(1): 17-27. Doi: 10.1016/j.ijrobp.2023.01.046

Just-In-Time Outpatient Business Practice Management Training for Senior Internal Medicine Residents

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Idea: Internal Medicine residents will perform critical aspects of outpatient business practice management after completing training using active learning.

Need: The US is expected to face a shortage of primary care physicians ranging from 21,000 to 55,000 by the year 2033.(1) The business aspects of outpatient practice can be daunting and even a deterrent to some trainees considering primary care careers, "...many physicians struggle in their first professional endeavor after residency training because they aren't prepared."(2) It is incumbent on training programs to adequately prepare residents in non-medical tasks essential to success. For example, "medical coding and billing are a critical component of daily practice that determine financial stability as well as legal compliance of a medical establishment"(3), but they are not typical components of IM residency curricula. Other important aspects of practice management are similarly neglected. This just-in-time training module aims to address these significant training gaps. This course is designed to incorporate medical economics, practice management, and reimbursement through an interactive curriculum that moves from classroom to clinic to ensure practice application. The goal of this framework is to enable each participant to engage in the non-clinical elements of primary care before beginning their first post-residency job.

Methods: This course will be designed to instruct graduating PGY3 IM residents each academic year with emphasis on those participating in the Primary Care Track program, n= 5-10. The module will be delivered in the last 3 months of training so the material will have the most relevance and staying power. The didactic portion of the curriculum will include three 2-hour hybrid sessions (either in-person or remote options available to facilitate participation). Content will be divided into three categories: Medical Economics (general healthcare economic principles and insurance constructs including Medicare, Medicaid, and private insurance), Practice Management (budgeting, personnel management, and liability), and Reimbursement (documentation, coding and billing, and reimbursement patterns including pay-for-performance). To encourage engagement and sustained attention during these modules, the classroom sessions will incorporate active and collaborative learning techniques including gaming and case discussions to teach both component information and skills and to practice application. In addition, each resident will employ deliberate practice by utilizing knowledge and skills in their outpatient clinic. Examples include completing the coding and billing for each patient encounter (currently optional) and an assessment of staffing plans and completion of a budget as if the learner were the clinic director. Immediate performance feedback will be provided to learners.

Evaluation Plan: The evaluation will have multiple elements. 1). Accountability: All activities in this course will be tracked to record attendance and to note how closely the implementation of activities in the classroom and clinic follow the curricular plan. 2). Reaction: Residents will complete a brief anonymous survey at the end of each classroom module, and at completion of the clinic application activities to gauge level of enjoyment of each element, level of engagement reported for each element, and how easily they were able to apply in the clinic what was learned in the classroom. 3). Learning: A pre- and post-test will be administered at the beginning and end of each module to gauge as well as reinforce learning. Learner application activities completed in the clinics will be reviewed using pre-developed checklists and given to learners as formative feedback. 4). Behavior: A follow-up survey will be developed to be completed by participants 3 months into post-training clinical practice to solicit reflection about what elements of these modules were more/less helpful. All evaluation results will be used to ascertain what additional topics might be beneficial and to shape future curriculum.

Potential Impact: Primary care trainees need preparation for outpatient clinical practice management. Using active learning and deliberate practice techniques this course will help ensure success following

residency. Furthermore, the curriculum can be easily expanded and broadly generalized to other training programs in IM as well as other specialties.

References:

- 1) <https://www.health.harvard.edu/blog/why-is-it-so-challenging-to-find-a-primary-care-physician-202209282822>
- 2) Block DJ. Easing into your new practice after residency: tips for success. *Fam Pract Manag.* 2013 Jul-Aug;20(4):13-6. PMID: 23939769.
- 3) Burks K, Shields J, Evans J, Plumley J, Gerlach J, Flesher S. A systematic review of outpatient billing practices. *SAGE Open Med.* 2022 May 23;10:20503121221099021. doi: 10.1177/20503121221099021. PMID: 35646364; PMCID: PMC9134459.

Equipping Pediatricians to Be the First Line on the Mental Health Crisis

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Idea: Interviewing pediatricians to understand their needs and knowledge gaps in the current mental health crisis and assessing our educational intervention.

Need: Post-covid a significant amount of children come into their pediatrics appointment with a concern about their mental health, some reports stating it may even be over half. Pediatric residency does not devote a lot of the residency training to mental health, yet it is one of the biggest problems that is currently being faced. In our pilot study we ran an educational intervention with the aim to support the further education of the cohort to help combat this. Before and after the educational intervention we conducted interviews in order to assess the needs of the Pediatricians, all of our interviewees further explained the dire need for further education and resources. Most explained that all of their mental health knowledge came from seeking external education or from learning on the job. Many of the Pediatricians expressed a level of discomfort when treating patients with mental illness especially when it came to recommending interventions such as pharmaceuticals. The mental health workers, especially those equipped to deal with children, are currently extremely overwhelmed leaving the Pediatricians to often be the only mental health support provider for these patients. Even in cases when the patient should be seeing a psychiatrist

Methods: 1. Pre-Interviews were performed on zoom asking questions assessing what they hoped to get out of the intervention, what their current knowledge gaps, and struggles are using qualitative methods to hear out individual physicians on what areas they feel need to be the most addressed.

2. The 4 hour didactic educational seminar was presented to pediatricians at CHLA with options for both online and in person viewership.

3. 1 month later post interviews were conducted with the intent to see how/if their practice changed, what they liked about the intervention, what they would have changed, and what they want to see in future events

4. 10-12 months after we will be assessing if they have kept up using the things they learned and do another needs assessment

5. Using our data we will pull specific themes and needs to try and create future intervention focused on supporting the needs of the pediatricians when looking at mental health

Evaluation Plan: Both pre- and post-surveys have been successfully administered, and an initial analysis has been conducted. In pursuit of maximizing the insights gleaned from each participant and capturing their unique experiences, this study primarily relies on qualitative data. Through in-depth interviews, we extract common themes and ideas. Upon the conclusion of the post-survey and interviews in the coming months, we will proceed to assess the effectiveness of our interventions. This evaluation, in combination with the needs assessments provided by pediatricians, will inform the development of further interventions.

Potential Impact: To assess the needs and struggles of current pediatricians, assess the effectiveness of our past intervention, and to create interventions to help pediatricians feel more equipped to deal with the current mental health crisis.

References:

- 1) Mat Hassan, N., Salim, H. S., Amaran, S., Yunus, N. I., Yusof, N. A., Daud, N., & Fry, D. (2023). Prevalence of mental health problems among children with long COVID: A systematic review and meta-analysis. *PloS one*, 18(5), e0282538. <https://doi.org/10.1371/journal.pone.0282538>
- 2) McMillan, Julia A., et al. "Pediatric residency education and the Behavioral and Mental Health Crisis: A call to action." *Pediatrics*, vol. 139, no. 1, 2017, <https://doi.org/10.1542/peds.2016-2141>.

Introduction of a Novel Why Slide to Enhance Health Disparities Education During Residency Training

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LAG/USC Emergency Medicine

Idea: Incorporation of a “why” slide into residency conference lectures to better integrate patient-centered health disparities education into the residency.

Need: The ACGME Common Program Requirements advise all medical residencies to include education relevant to the program’s mission and the needs of the community it serves. This includes building an understanding of how to recognize and address social determinants of health in their patient populations(1). While some residency programs have begun incorporating discussions of health inequity in their curricula, there is currently no standardized approach to providing instruction on healthcare disparities. Additionally, lack of instructor expertise and buy-in, educator discomfort in facilitating sensitive discussions, and challenges in creating sufficient space within the residency core curriculum can hinder effective dissemination of education on these topics (2). Unsurprisingly, there is significant variability in resident knowledge of healthcare disparities and widespread lack of training on this issue (3). At our emergency medicine program, we offer formal electives and sporadic conference lectures on healthcare disparities, but have struggled to provide longitudinal, well-integrated education that is accessible to all residents and faculty members.

Methods: During our 3.5 hour residency educational conference each Thursday morning, residents and faculty members attend approximately five lectures on emergency medicine core content. During the 2022-2023 academic year, all faculty and resident lecturers were asked to include a “why” slide into all of their presentations, regardless of assigned lecture topic. This “why” slide would include a talking point reflecting on the interplay between emergency medicine core content and the lived realities of our patient population. In their “why” slides, faculty and resident presenters were asked to draw a connection between their educational topic with social, economic, racial, environmental, or institutional factors that impact the translation of science to the health of patients. For example, a lecturer presenting on antibiotic choice in cellulitis could include a “why” slide discussing how working in a resource poor setting would influence treatment considerations or could incorporate race/identity-based treatment recommendations. As a result, resident trainees were presented with longitudinal, weekly, and integrated discussions of social determinants of health that uniquely affected their patient care. Additionally, given that all residents and faculty members are required to lead conference presentations, dissemination of health disparities education became a universal responsibility, marking a cultural shift within our program.

Evaluation Plan: While we did not establish a comprehensive program evaluation plan during the 2022-2023 academic year, we hope to more rigorously evaluate the “why” slide innovation during the current academic year. To ensure compliance, we will add a question to our existing weekly post-conference lecture evaluation form asking conference attendees to confirm that lecturers have included a “why” slide. Additionally, our current lecture evaluation form includes the following question: Did this lecture or its discussion include any content regarding health equity or bias in medicine? We plan to use descriptive statistics in comparing anonymous responses to this question pre- and post-implementation of the “why” slide innovation. At the conclusion of the academic year, on the anonymous annual program evaluation, we will add resident respondents to provide both quantitative Likert-based responses and qualitative free text feedback on their satisfaction with the “why” slide innovation. Additionally, we will include questions probing the impact of the innovation on enhancing their understanding of healthcare disparities within our patient population.

Potential Impact: The “why” slide offers an easily implemented strategy to address gaps in health disparities education while broadening the target audience, circumventing challenges in faculty

recruitment and buy-in, and more effectively and longitudinally integrating this essential topic into core residency curricula.

References:

- 1) ACGME Common Program Requirements (Residency) ACGME-approved focused revision: June 13, 2021; effective July 1, 2022 Editorial Revision: Background and Intent below II.C.2., VI.C., and VI.C.1.e) updated March 2022
- 2) Landry, A. Integrating Health Equity Content Into Health Professions Education. *AMA J Ethics.* 2021;23(3):E229-234. doi: 10.1001/amajethics.2021.229.
- 3) Wagner R, Koh N, Bagian JP, Weiss KB. CLER 2016 national report of findings. Issue brief #4: health care disparities. Accreditation Council for Graduate Medical Education; 2016.

Enhanced Pediatrics POCUS Skills in a Longitudinal Curriculum Through the Use of Admitted Patients

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Idea: Pediatrics residents will develop greater confidence in POCUS use through addition of admitted to typical didactics.

Need: POCUS has long been vital for adult and emergency medicine settings. In recent years, calls for its adoption as a routine part of pediatrics training have grown as recognition of its utility in this population expands (1). Adoption has remained low, and graduates without structured training often need more confidence in its use (2, 3). This is a disservice to patient care as POCUS is increasingly recognized as a crucial tool in the physician's skill set. Though medical students are increasingly likely to have had structured POCUS training in a simulation setting (reference), enhanced retention occurs when skills are applied to actual patients. This can be difficult if a curriculum relies on patients having an acute clinical indication for a POCUS evaluation, as patient statuses can change quickly and create scheduling difficulties for a residency program. On the other hand, hosting a few standardized patients in a lecture hall may lead to inadequate time for resident trainees to practice recently taught techniques and does not allow for the realism of being in a clinical environment. We will structure our longitudinal POCUS curriculum to incorporate admitted, previously consented/assented patients.

Methods: The curriculum will focus on 99 pediatric medicine residents over the next year of training. The intervention will include monthly didactic/workshop teaching sessions starting in the 5th month of the academic year. There will be sessions covering the following: basics, cardiac, lung, fluid status, eFAST, and MSK fundamentals. These sessions will be composed of 2 minutes for the pre-course survey, a 10-minute PowerPoint didactic outlining, in brief, the indication and technique, and then a small break-out into groups led by a faculty or resident with prior training. These groups will have an assigned patient in one of the various wings of the children's hospital. The patient/guardian will have been assented/consented before the session. The breakout group will travel to the patient's room, where the group leader will demonstrate the technique using either a hand-held US (e.g., butterfly or Vscan) or a unit portable US machine. The leader can then allow each group member to perform the exam in this supervised setting. When finished, the group will undertake a post-session survey.

Evaluation Plan: 1) Accountability: We will track the integration of workshops/lectures into the core curriculum didactics monthly. 2) Reaction: Didactic presentations will be evaluated by reviewing resident responses to questions. A survey will be delivered before and after every session. Part of the survey will include perceptions of the usefulness of information and confidence in its future incorporation into clinical practice. 3) Learning: Residents will receive pre and post-testing of knowledge on session material, including indications, technique, and potential pitfalls. Direct observation will also be obtained from faculty and group leaders on residents practicing the technique on admitted patients. 4) Behavior: Learners will be more comfortable and confident when working with these patients, as faculty/group leaders witnessed.

Potential Impact: POCUS improves the quality of care in pediatrics with its degree of adoption. Bridging the theoretical applications with real patient encounters could enhance pediatric resident comfort and create a more durable skillset to bear in future practice. If successful, our incorporation of actual patients can serve as a model for other institutions.

References:

- 1) Good RJ, O'Hara KL, Ziniel SI, Orsborn J, Cheetham A, Rosenberg A. Point-of-Care Ultrasound Training in Pediatric Residency: A National Needs Assessment. *Hosp Pediatr.* 2021 Nov;11(11):1246-1252. Doi: 10.1542/hpeds.2021-006060. Epub 2021 Oct 8. PMID: 34625490.

- 2) Sabnani R, Willard CS, Vega C, Binder ZW. A Longitudinal Evaluation of a Multimodal POCUS Curriculum in Pediatric Residents. POCUS J. 2023 Apr 26;8(1):65-70. doi: 10.24908/pocus.v8i1.16209. PMID: 37152329; PMCID: PMC10155733.
- 3) Renuka Tripu et al. Graduating Surgical Residents Lack Competence in Critical Care Ultrasound, J of Surg Edu, 2018, 75;3: 582-588. doi.org/10.1016/j.jsurg.2017.09.022.

Internal Medicine Safety Rounds: Strategy to Inspire Life-Long Physician Safety Champions.

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Methodist LeBonheur Healthcare; Methodist LeBonheur Healthcare

Idea: Developing safety leadership skills and behaviors of Internal Medicine residents by integration in patient safety rounds and identifying system gaps.

Need: Inspiring Internal Medicine residents as life-long patient safety champions is a shared responsibility of GME and clinical sites. Innovative educational strategies that address key knowledge, skills, attitudes, and behaviors from Internal Medicine milestone competencies and gaps identified by ACGME CLER pathways to excellence inform safety curriculum goals and objectives. The NCICLE* framework outlines clinical skills and behaviors to address in resident safety curriculums built on the foundation of resident participation in interprofessional patient safety event analysis. Safety event reporting is core to propelling an organization's culture of safety and HRO journey. Yet, resident reporting remains low. Residents receive safety training during orientation and participate in safety event analysis during their 1st year of training. In addition, integration of experiential learning during standardized safety rounds is hands-on, with opportunity for residents to identify and report safety events, and integrate into system improvement teams. The integrated curriculum provides opportunities for residents to reflect and practice their patient safety leadership skills.

Methods: The intervention, RAPS Rounds (Resident Actions for Patient Safety) is a component of longitudinal Internal Medicine resident safety curriculum will occur monthly during didactic half-day. Residents assigned to teams complete rounds in 45 minutes using a standardized tool to verify patient safety norms. Rounding incorporates the organization's high-reliability work, assigning each resident to interview 3 health care team members with a focus on understanding the monthly safety tool. Faculty and multidisciplinary leaders facilitate the rounds, and residents address previously identified patient safety gaps such as central line maintenance, urinary catheter medical necessity, or portable oxygen therapy in the ED. A standardized documentation tool guides rounds and document identified safety concerns, including reports from hospital employees and patients. Faculty directly observe and coach resident's competency in eliciting and discussing safety concerns, and support them during the debrief discussion. The rounds further engage early learners and reinforce high reliability organization tones and tools taught during orientation, serve as a catalyst for safety event reporting, and lead to the adoption of Safety Champion personas that affect the clinical learning environments safety culture. Faculty evaluate resident competencies based on system-based patient safety/quality improvement milestones and acquisition of NCICLE clinician skills.

Evaluation Plan: We will track the impact of adding safety rounding as an experiential learning tool to resident safety curriculum. The Kirpatrick evaluation model will inform the evaluation methodology. Evaluation includes: 1) Pre-survey resident feedback related to baseline safety knowledge, behaviors and impressions about the safety rounding process; 2) Standardized rounding tool to track number of healthcare team members interviewed, number of patients interacted with, and number of reported safety events.; 3) Post-survey resident feedback related to impact on comfort as a patient safety champion and assessment of competency development by ACGME milestones and NCICLE clinician skills for the group and individuals; 4) Include faculty direct observation of residents during rounding and debrief, providing feedback. The focus is on developing resident safety leadership skills and inspire them to embrace their role as a patient safety champions, and promotion of system improvements. In addition, ensure each resident understands the importance of reporting safety events, including near misses, to drive data and inform continuous improvement efforts.

Potential Impact: Integration of resident physicians into hospital safety culture to encourage life-long safety advocates is a priority. Building safety knowledge with didactic strategies is insufficient; strategies should include involvement in interprofessional safety event analysis and other tactics such as safety rounding to build safety leadership skills.

References:

1) https://www.abqaurp.org/Docs/NCICLE_Patient-Safety-2017.pdf

Crafting a Customized Residency Curriculum: Enhancing Learning Through Insightful Resident Feedback

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Idea: Development of a tailored curriculum for senior residents through resident interview surveys to identify gaps in knowledge.

Need: Residents are crucial in the healthcare domain, yet their learning requirements shift according to their ever-changing clinical encounters. As one advances in medicine, the pressure of existing expectations makes it increasingly challenging to seek clarifications, leading to unaddressed knowledge gaps (1). This can particularly affect senior residents who are anticipated to understand intricate medical processes and diseases. Consequently, there's a pressing call to reassess and reformulate prevailing educational frameworks to augment the residency journey and boost resident contentment (2). Our proposed innovative approach fosters a connection between what the faculty envisions and the areas where residents recognize their own gaps, paving the way for a personalized learning experience. It's vital for residents to view their clinical training as pertinent and to have confidence in their capabilities, especially when aiming for excellence in complex clinical settings.

Methods: The model begins with a comprehensive pre-rotation resident interview survey targeting 5-10 senior residents in their last years of residency who want to identify and bridge gaps in their learning. The survey will focus on 3 main objectives: assessment quiz covering level-appropriate concepts, utilization of a 5-point Likert scale to assess confidence in specific topics, and identification of the type of learning resource the resident deems most helpful. The collected data are then analyzed to create specific learning objectives based on areas of weakness, ensuring that the educational content directly addresses the resident's unique needs. This includes specifically assigning relevant patient cases, creating a list of recommended readings on specific topics, and links to additional online video and/or interactive resources. At the end of the rotation, the resident will complete a post-rotation survey that will be reviewed with an assessment quiz, level of confidence scales, learner satisfaction and feedback. For common topics that multiple residents have identified as potential gaps, the curriculum for junior residents will be adjusted to better account for the deficiencies.

Evaluation Plan: The success of the model will be assessed by the following metrics: 1) performance on the assessment quiz before and after the rotation, 2) comparison of pre-test and post-test Likert confidence scales for various subspecialty topics, and 3) survey assessing learner satisfaction of additional patient cases, effectiveness of additional reading and online resources, and level of satisfaction with the overall tailored curriculum.

Potential Impact: Incorporating resident self-evaluation and feedback into curriculum design enables senior residents to steer their educational trajectory, guaranteeing they acquire the requisite knowledge and expertise for their roles. Ultimately, a customized curriculum has the potential to positively impact resident satisfaction and improve patient care.

References:

- 1) Kennedy TJ, Regehr G, Baker GR, Lingard L. Preserving professional credibility: grounded theory study of medical trainees' requests for clinical support. *BMJ*. 2009;338:b128. Published 2009 Feb 9. doi:10.1136/bmj.b128
- 2) Halsted MJ, Perry L, Racadio JM, Medina LS, LeMaster T. Changing radiology resident education to meet today's and tomorrow's needs. *J Am Coll Radiol*. 2004;1(9):671-678. doi:10.1016/j.jacr.2004.04.002

Peer Observation and Feedback: an Innovative Curriculum to Develop Residents as Educators

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Idea: Create an innovative peer observation and feedback curriculum with aim of developing residents as educators.

Need: Graduate medical trainees play a prominent role as teachers in the clinical learning environment. Despite the importance of this role, residents receive minimal structured feedback about their teaching skills(1), which can be valuable learning conversations that support their development as educators. Internal medicine residency leadership at a tertiary academic medical center have identified a need for residents to receive more feedback on their teaching skills and emphasized the value of this feedback coming from near peers. Through a search of MedEdPORTAL, many published residents as educators curricula focus on didactic teaching topics such as giving feedback and teaching in the clinical setting(2,3), but few published curricula incorporate the use of peer observation and feedback as a way of developing residents' clinical teaching skills. Bandura's social cognitive theory, including the concept of self efficacy, can be applied in framing the benefits of peer observation. To meet this need, we propose a curriculum that prepares residents to conduct peer observation and feedback and ultimately will create a system for near peer observation and feedback to support residents' clinical teaching skills.

Methods: We will be applying Kern's six steps to curriculum development: 1. Problem identification 2. Targeted needs assessment 3. Goals and objectives 4. Educational strategies 5. Implementation 6. Evaluation and feedback.

The educational strategies we will employ draw from an array of published literature on residents as teachers curricula, established peer observation programs, and teaching frameworks. The curriculum will compose of modules and a practical component.

For the modules (estimated 4-5 total), there will be a mix of didactics and small-group discussion. The modules will discuss the education theory of social cognitive practice and its application to peer observation, cycle of peer observation (self reflection, pre observation, observation, and post observation reflection and feedback), creation of an observation worksheet/guide, topics based on the established and well-studied Stanford clinical teaching course, and content on creating a safe and inclusive learning environment (including identifying struggling learners and strategies to work with them).

For the longitudinal observation and feedback component, it will take place in multiple formats such as observation of wards teaching and mini-chalk talk teaching sessions.

Evaluation Plan: Our evaluation plan is based on Kirkpatrick's four distinct levels of evaluation.

Level 1: Reaction

After each module, participants will be asked to fill out a short survey to capture participants' reactions to the training experience. The survey will be short and done right after each module to minimize survey fatigue and ensure more survey completion.

Level 2: Learning

The peer review cycle itself serves as the practical skills portion by applying what is learned in the modules into an actual peer observation experience. There will be some initial faculty guidance and review of these observation sessions with opportunities for faculty to give verbal feedback on these sessions to the observer.

Level 3: Behavior

With the right tools to conduct peer observation and feedback, we hypothesize more observations will be done. We will be tracking the number of observations completed for each resident and checking in periodically during the academic year and identifying barriers if observations are not being completed.

Level 4: Results

A short pre and post curriculum survey using a Likert scale will be conducted (assessment of self-efficacy).

Potential Impact: The plan is for the didactic modules to be also made available on a digital medium that can be easily accessed. There will also be the creation of facilitator guides for live sessions. If the curriculum is well received, it can be disseminated easily and broadly online and create a foundation for other medical centers to adapt.

References:

- 1) Habboush, Y., Stoner, A., Torres, C. et al. Implementing a clinical-educator curriculum to enrich internal medicine residents' teaching capacity. *BMC Med Educ* 19, 459 (2019). <https://doi.org/10.1186/s12909-019-1888-0>
- 2) Harrell H, Wipf J, Aronowitz P, Rencic J, Smith DG, Hingle S, Bordley D, Mendez P, Green E, Friedman E, Loftus T, Simons R, Stark R, Diaz Y, Hershman W. Resident as Teacher Curriculum. *MedEdPORTAL*. 2015;11:10001. https://doi.org/10.15766/mep_2374-8265.10001
- 3) Bree KK, Whicker SA, Fromme HB, Paik S, Greenberg L. Residents-as-Teachers Publications: What Can Programs Learn From the Literature When Starting a New or Refining an Established Curriculum? *J Grad Med Educ*. 2014 Jun;6(2):237-48. doi: 10.4300/JGMED-13-00308.1. PMID: 24949126; PMCID: PMC4054721.

From Canvas to Clinic: Training Medical Students on Observational Skills Through Art Analysis

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Idea: Course focusing on analysis of various art mediums, with integration of perspectives across medical specialties to improve clinical observation skill.

Need: Working in clinical settings requires robust skills in observation and reflection. However, medical students are rarely provided the opportunity to hone these skills outside of a clinical context. A survey of clerkship directors found almost half believed that third-year medical students were inadequately prepared to conduct interviews and physical examinations during their clerkship year. Additionally, as medical schools move towards shortening preclinical curricula, students have less time to refine skills in leading patient interviews, completing physical examinations, and interpreting diagnostic imaging – key competencies for success in clerkships. Many schools have adopted arts curricula to develop not only students' clinical skills but also their capacity for creativity, empathy, and self-reflection. The majority of these curricula are delivered to students during their preclinical years. In addition, there is a strong focus on visual art mediums. However, few programs incorporate a variety of sensory mediums or present perspectives from physicians on art in their practice. We propose a new elective curriculum for clerkship students to engage in art analysis to improve the quality of and confidence in clinical observations.

Methods: The two-week elective will be offered to medical students at the Keck School of Medicine of USC in their fourth year. The course will focus on (1) development of art analysis skills, (2) clinical tie-ins, and (3) self-reflection. To develop students' art analysis skills, we will work with educational partners at art institutions across Los Angeles to host sessions for observing and discussing art. Mediums will include visual art, theater, film, music, and opera. Select pieces will depict experiences of illness and disability. In these cases, discussions will center on themes applicable to clinical practice, including public perceptions of physicians; interpersonal communication and teamwork; medical ethics; death, dying, and grief; and cultural beliefs on health and healing. To apply these analytical skills, we will host workshops with attending physicians to demonstrate how they use observation in their practice. Sessions will include using "search patterns" to interpret diagnostic imaging and using visual arts vocabulary to complete a skin examination. Lastly, we will encourage students to introspect through reflective writing prompts. Prompts will ask students to consider how the course contributed to their professional identity formation. Students may choose to submit their pieces for publication. Future iterations of this course may be opened to residents and fellows, as well as students from other institutions.

Evaluation Plan: Students will be given a pre-elective survey to assess initial comfort with clinical observation, baseline level of clinical observational skill (e.g. asked to describe a dermatological finding or share a "general appearance" exam from a picture of a patient), and measures of perceived burnout. Upon completion of the course, students will take the same survey to assess improvement in clinical observation-making and possible impact on well-being. Additional questions will be added to the post-elective survey to determine the benefits of the elective, including contributions to professional identity formation and ways to improve the elective to better prepare students for a career in medicine. In addition, students will take a "Spot the Diagnosis" final exam, identifying hidden physical exam findings in historical art to assess potential improvements in clinical observation skills. With this information and students' final reflective writing pieces, we will conduct a quantitative and qualitative analysis to examine students' growth in clerkship competencies, perceived strengths of the elective, and areas for change in future versions of the course.

Potential Impact: An art analysis elective for post-clerkship students incorporating art across sensory mediums will enable students to hone their clinical skills and grow their capacity for self-reflection and creative thinking. Other health professional schools can adapt our elective to prepare students to provide empathetic patient care in residency and beyond.

References:

- 1) He, B., Prasad, S., Higashi, R.T. et al. The art of observation: a qualitative analysis of medical students' experiences. *BMC Med Educ* 19, 234 (2019). <https://doi.org/10.1186/s12909-019-1671-2>
- 2) Mangione, S., Chakraborti, C., Staltari, G. et al. Medical Students' Exposure to the Humanities Correlates with Positive Personal Qualities and Reduced Burnout: A Multi-Institutional U.S. Survey. *J GEN INTERN MED* 33, 628–634 (2018). <https://doi.org/10.1007/s11606-017-4275-8>
- 3) Windish, D. M., Paulman, P. M., Goroll, A. H., & Bass, E. B. (2004). Do clerkship directors think medical students are prepared for the clerkship years?. *Academic medicine : journal of the Association of American Medical Colleges*, 79(1), 56–61. <https://doi.org/10.1097/00001888-200401000-00013>

Faculty Workshops for Clinical Instructor Supervising Early Learners in a High-Risk Environment.

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Idea: Clinical faculty for perfusion education lack the knowledge to effectively teach, assess, and participate in clinical education for the MSPS program.

Need: Cardiovascular perfusion is an emerging healthcare specialty that has developed to a Master of Science level field accredited by the AC-PE. There are only 20 accredited programs in the country, none of which are on the West Coast (1). To address this lack of local programs, the University of Southern California is developing a Master of Science in Perfusion Sciences program beginning in 2025. This five-semester program will utilize four semesters of clinical education instructed by 11 full-time cardiovascular perfusionists who are clinically competent, yet require additional instruction to be competent educators within program learning objectives and accreditation committee standards and guidelines for clinical faculty (2). Implementation of interactive workshops that incorporate Team Observed Structured Clinical Encounters (TOSCE) and role-play scenarios will effectively prepare faculty skills to be effective educators and leaders in the clinical setting (3).

Methods: Prior to the first cohort of the University of Southern California's Master of Science in Perfusion Sciences program, 11 practicing, certified cardiovascular perfusion faculty that will be proctoring clinical courses will complete a needs assessment in relation to their knowledge of teaching. This needs assessment will provide information on areas of focus for the faculty development workshops. The faculty development program will be delivered in two 4-hour sessions over the course of one month. There will be two cohorts participating in the same two sessions to ease clinical scheduling conflicts. The first workshop will familiarize educators with the ideas of learning, including the domains of learning, and types of knowledge as it relates to perfusion. It will also educate faculty on the learning outcomes of the program and the standards of clinical educators that they will be expected to adhere to. Between sessions, faculty will complete online education modules published by AC-PE. The second four-hour workshop will reiterate learning by utilizing role-play and team observed simulation clinical encounters (TOSCE) within learning cohorts. Scenarios involving anticipated challenges with students and educators will be presented as cases for discussion and role play. At the end of this training, clinical faculty should be well-educated, competent, confident, and prepared to support the clinical program.

Evaluation Plan: Accountability of faculty will be demonstrated by staff attendance and participation in the workshops. Faculty learning and reaction will be measured with two evaluations; first, by self-assessment surveys completed both at the end of the workshops and after the first year of clinical education with perfusion students, and second, by student evaluations after the first year of their clinical education. Faculty will also be asked to provide feedback that will be incorporated into future iterations of the workshops. Self-assessment by the faculty and assessment by the students will be compared to the initial responses to the needs assessment survey given prior to the workshops. Faculty growth and learning will be evidenced by an improvement in competency and application of the measured areas, such as ability to communicate complex concepts, incorporation of learning strategies, and providing adequate and fair assessment to students. These workshops will be repeated every two years, or as new faculty is inducted, to maintain educator skills within the clinical team. Effective faculty development within these workshops will result in involved, knowledgeable clinical faculty and optimal student progression through the Master of Science in Perfusion Sciences program.

Potential Impact: A rich and intentional clinical education proctored by the USC perfusion faculty will best equip and prepare perfusion graduate students to serve patients. The educational strategies and methods of assessment utilized will also have a multi-generational effect as these students will graduate and proctor the next generation of perfusion students.

References:

- 1) Perfusion School Directory: SpecialtyCare: Perfusionist training. SpecialtyCare. (2023, April 25). <https://specialtycareus.com/perfusion-school-directory/>
- 2) AC-PE. (n.d.). Clinical Instructor Responsibilities. <https://ac-pe.org/for-clinical-sitesinstructors/clinical-instructor-responsibilities/>
- 3) O'Connell, Mary Beth, et al. "Using community pharmacies and team observed structured clinical encounters (TOSCEs) for Interprofessional Education and training." *Currents in Pharmacy Teaching and Learning*, vol. 13, no. 1, 2021, pp. 19–28, <https://doi.org/10.1016/j.cptl.2020.07.018>.

Healing Conversations: a Longitudinal Curriculum to Teach Patient-Centered Communication

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Idea: Using a longitudinal curriculum and teach-forward strategies with pediatric oncology fellows to improve communication and enhance patient care.

Need: An ability to communicate effectively with patients with critical health conditions, who are at the end of life, or who generally have chronic healthcare needs is an integral part of providing quality healthcare. Adequate communication with patients is associated with improved adherence to therapy, pain, improvement in symptoms, and clinical trial participation. Many barriers to communication exist between healthcare providers and diverse patient populations, some of which can be described by pediatric hematology/ oncology providers including: lack of comfort with difficult topics and cultural differences. Furthermore, in a multi-institutional study of communication with pediatric oncologists, 95% of parents noted a negative experience in communication with their healthcare provider at some point during their care. Thus, it is crucial to teach effective, empathetic communication strategies to trainees that also acknowledges biases and focuses on cultural competence.

Methods: During this curriculum, 12 pediatric oncology fellows (PGY 4-7) at Children's Hospital Los Angeles will attend a yearlong longitudinal workshop series on communication. This series will include five one-hour sessions occurring during the fellows' noon lecture series. The first session will provide an introduction to the series, introduce basic DEI topics including biases, assumptions, the role of pediatric health care providers at providing culturally competent care. The second session will focus on mental health concerns and awareness (of providers, patients and their families). The third session similarly will be focusing on working with and supporting caregivers to provide patient-centered care. Sessions four and five will focus on difficult conversations, initially providing a basic framework to provide effective and compassionate communication. These sessions will also give fellows a framework to facilitate difficult conversations such as end of life and goals of care. Each of the sessions will include health literacy, as well as working with patients of diverse cultural and socioeconomic backgrounds. During the longitudinal curriculum, there will be two lectures given by the fellows to the pediatric residents at Children's Hospital Los Angeles (PGY2-3) during their oncology rotations encompassing material covered in the fellows' longitudinal curriculum, focusing on patient-centered care, end of life discussion, and goals of care.

Evaluation Plan: Evaluation of the lecture series will occur as follows: (1)Pre and post-session surveys given to the fellows using the Likert Scale to detail learning outcomes and reaction to content (2)Qualitative component in pretest surveys describing what has changed in fellows' clinical practice since last session and qualitative component in the posttest describing commitment to change/ intent to act (3)Pre and post tests given to residents to evaluate fellows' presentation and comprehensive synthesis of material given in the fellow lecture series (4)ACGME survey results for pediatric hematology/oncology fellows will be monitored in the categories of interpersonal and communication skills and systems based practice (5) Attendance and participation will be tracked by the educational coordinator. Survey results from the pre and post tests administered by both the fellows through their longitudinal curriculum and the residents during their abridged lectures will be analyzed using a paired t-test. The data from these t-tests will be analyzed to determine the efficacy of the lecture series and analyze the learner's comfortability and perceived growth with the topics.

Potential Impact: Communication with patients and their families are crucial in proving effective care to patients with critical illness. Using a combination of a lecture series and the teach-forward method of reinforcing education, learners may develop these skills earlier in their career and learn to provide optimal patient care.

References:

- 1) Bhatia, S., Disparities in cancer outcomes: lessons learned from children with cancer. *Pediatric blood & cancer*, 2011. 56(6): p. 994-1002.
- 2) Aristizabal, P., et al., Participation in pediatric oncology research protocols: Racial/ethnic, language and age-based disparities. *Pediatric blood & cancer*, 2015. 62(8): p. 1337-44.
- 3) Sisk BA, Zavadil JA, Blazin LJ, Baker JN, Mack JW, DuBois JM. Assume It Will Break: Parental Perspectives on Negative Communication Experiences in Pediatric Oncology. *JCO Oncol Pract*. 2021 Jun;17(6):e859-e871. doi: 10.1200/OP.20.01038. Epub 2021 Apr 13. PMID: 33848191; PMCID: PMC8257978.

Implementing a Student-Led Program to Bridge the Gap Between Medical Education and the Humanities

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Problem Statement: Medical curriculums often lack a humanities component despite its effectiveness at increasing students' professional skills.

Rationale: It has been established that medical students and physicians struggle to communicate effectively and connect empathetically with patients, especially as they continue through their careers. In fact, it is known that healthcare professionals tend to lose empathy and communication skills as they progress through their training, with some studies showing this deterioration beginning during undergraduate education. One proposed solution is to incorporate medical humanities into undergraduate medical education, which has been correlated with improved empathy scores among students. Therefore, medical schools across the United States seek to find innovative ways to incorporate the medical humanities into their curriculum in an effort to increase students' empathy and ethical decision-making skills as they are shaped into well rounded physicians.

Methods: The Humanities in Medicine Lecture Series program (HMLS) is a student-led initiative created to help expose medical students at the UTMB John Sealy School of Medicine (JSSOM) to topics in the humanities. First held during the 2022-2023 academic year, 144 pre-clinical medical students voluntarily enrolled in the program that consisted of three main events: Music in Medicine, Art in Medicine, and Poetry in Medicine. Students who attended at least 2 of the 3 above events, 1 virtual ethics webinar from the Institute for Bioethics and Health Humanities at UTMB, and 1 of 2 annual Oslerian Luncheon events, which addressed topics such as Grief, Mortality, and the Journey of Healing, received a certificate of completion and a white coat pin. Pre-surveys were collected from enrolled students to assess their interest in the medical humanities, their understanding of the field and what they hope to gain by participating in the HMLS. Following completion of the program, post-surveys were also collected to follow up on the original pre-survey questions. These surveys assess their takeaways from each session as well as feedback on the program as a whole. A paired T-test was run in R to compare pre- and post-survey scoring in order to evaluate student learning and satisfaction with the program. To assess program outcomes qualitatively, written responses were coded independently, inter-rater reliability tests were conducted, and themes identified.

Results: 144 JSSOM students enrolled in HMLS from October 2022 to March 2023. 87 students completed both pre- and post-surveys. These students had a positive and significant increase in their understanding of humanities as well as specific understanding of art, music, and poetry in medicine (p -values all <0.001). Students' interest in humanities increased if they felt they had inadequate exposure to humanities prior to the program ($p < 0.001$), however there was no significant change in interest in the humanities among students with prior exposure ($p = 0.1821$).

In the post-survey, 99% of students noted they now felt they had adequate exposure to humanities in medicine, compared to only 37% stating so in the pre-survey. The Music in Medicine event was attended by the greatest number of students with 123 participants.

We received overwhelmingly positive responses as many cited HMLS as "an enjoyable and enlightening experience" that they were "grateful to have taken part [of]" and hoped it would continue. We received no negative feedback regarding program content.

Preliminary thematic analysis revealed that students view the medical humanities as a means to connect with themselves, their patients and their colleagues; to enhance communication with their patients; to provide holistic, empathetic and mindful patient care, and as a means of self-expression and self-care as

they develop professionally. Most students indicated they will incorporate the humanities into their future practice.

Potential Impact: Interactive humanities curriculums provide students with opportunities to self-reflect on mortality, humanity and engage with the arts. Our program promotes the development of essential physician skills and encourages holistic treatment of patients. We believe student-led humanities initiatives can not only be impactful, but also sustainable.

References:

- 1) Liu, E.Y., Batten, J.N., Merrell, S.B. et al. The long-term impact of a comprehensive scholarly concentration program in biomedical ethics and medical humanities. *BMC Med Educ* 18, 204 (2018). <https://doi.org/10.1186/s12909-018-1311-2>
- 2) Shapiro, J., & Rucker, L. (2003). Can poetry make better doctors? Teaching the humanities and arts to medical students and residents at the University of California, Irvine, College of Medicine. *Academic medicine: journal of the Association of American Medical Colleges*, 78(10), 953-957. Pubmed ID: 14534086.
- 3) Graham J, Benson LM, Swanson J, Potyk D, Daratha K, Roberts K. Medical Humanities Coursework Is Associated with Greater Measured Empathy in Medical Students. *Am J Med*. 2016 Dec;129(12):1334-1337. doi: 10.1016/j.amjmed.2016.08.005. Epub 2016 Aug 24. PMID: 27566497.

Enhancing Patient Provider Communication Through Artistic Collaboration and Learning from Narratives

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Idea: Use artistic collaborations and reflections on structural humility to enhance medical students' ability to communicate with patients and colleagues.

Need: Given the ever-shifting US demographics, patient-centered care necessitates that health care providers effectively maintain a strong commitment to learning from colleagues and patients how racial, linguistic, socioeconomic, cultural, age, and gender differences impact medical care. We often ask patients from historically marginalized groups to thrive in the midst of adversity and beat the odds, without a full sense of how cultural practices, collective actions, and personal resilience shape how one views medical care and medical providers.

Methods: This collaboration in its second year brings together artists from Maraya Performing Arts, a Filipinx-American led non-profit and students from UCSD and CUSM to explore structural humility, patient narratives and empathy through devised theater. Participants create shared spaces for discussion and reflections on immigrant experiences, receiving care in a language other than one's mother tongue, and reasons why patients may avoid medical care and at times feel uncomfortable with medical providers. Shared discussions are recorded, transcribed and reviewed with artists from Maraya Performing Arts for use in the creation of spoken word poetry and prompts for the creation of modern dance pieces.

Evaluation Plan: Artists from Maraya Performing Arts will be encouraged to provide reflections on their participation in this collaboration to students and other members of Maraya Performing Arts. These reflections will be shared and an opportunity to discuss provided. On completion of the project (May 2024) students will be offered an opportunity to evaluate the project's (1) perceived impact on participants ability to communicate effectively with patients (2) perceived impact on participants ability to communicate with colleagues (2) likely impact on their commitment to learning from colleagues and patients who differ from them in regard to race, language, socioeconomic status, culture, age, or gender (3) perceived benefit of participation (4) interest in participating in similar project(s) in the future. Quantitative and qualitative survey responses will be elicited on 7-point scale (1- Strongly Disagree, 2- Disagree, 3- Somewhat Disagree, 4-Neutral, 5-Somewhat Agree, 6-Agree, 7-Strongly Agree) and through free-text responses.

Potential Impact: This collaboration provides a model for how medical schools, in the face of relatively low overall matriculation rates for individuals from historically marginalized communities, can still innovate and bring students in close collaboration with local community leaders to effectuate change.

References:

- 1) Singh Ospina, N., Phillips, K.A., Rodriguez-Gutierrez, R. et al. Eliciting the Patient's Agenda- Secondary Analysis of Recorded Clinical Encounters. *J GEN INTERN MED* 34, 36–40 (2019). <https://doi.org/10.1007/s11606-018-4540-5>
- 2) Charon R. The patient-physician relationship. *Narrative medicine: a model for empathy, reflection, profession, and trust.* *JAMA.* 2001 Oct 17;286(15):1897-902. doi: 10.1001/jama.286.15.1897. PMID: 11597295.
- 3) Liao H-C, Wang Y-h. Storytelling in Medical Education: Narrative Medicine as a Resource for Interdisciplinary Collaboration. *International Journal of Environmental Research and Public Health.* 2020; 17(4):1135. <https://doi.org/10.3390/ijerph17041135>

“See the World Through My Eyes”: Teaching Perspective Taking in Medical Physiology Course
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Problem Statement: An art project was designed in the course of medical physiology for optometry students to help them understand how patients may be seeing this world.

Rationale: Empathic communication and perspective taking are important skills for any healthcare provider, and they have to be developed in the process of training. Systematic reviews by Fragcos et al (2020) and Zhou et al (2021) showed the variety of methods used to teach empathy and perspective taking :experiential training, including skills training, role-playing, communication skills training with behavior-based workshops, didactics, group discussions on personal experiences, simulated scenarios including role play and simulated patients, the use of the arts and humanities, including poetry and literature, drawings and paintings

Methods: Project had the following learning objectives:

1. Understand and explain the mechanisms of vision impairment in some ocular diseases, as well as neurologic, endocrine, cardiovascular and metabolic disorders.
2. Enhance observation and interpretation skills.
3. Create awareness of patients' possible visual abnormalities.
4. Promote empathy, compassion and perspective-taking.
5. Recognize assumptions and mitigate biases.

Groups of 4 students were assigned with clinical conditions (ocular diseases, neurologic, endocrine, cardiovascular and metabolic disorders) for which they had to explain the mechanisms of vision impairment and describe in patients' own words how this affects their daily life. In the course of the project students were supposed to choose the art object from the world famous galleries with open online access and transform it to reflect the way patients might see this.

Anonymous post-project survey was used to evaluate the effectiveness of this intervention. Survey used Likert scale and open-ended questions to assess understanding of the mechanisms of vision impairment in a certain pathological condition, taking the patient's perspective, and satisfaction with the work on the project.

Results: 65% of participants reported significant and moderate knowledge increase and 77% reported significant and moderate enhancement of perspective taking.

Below are some of the students' feedback:

“My favorite thing about the project was that it was one of the only things in first year that involved collaborating with other students outside of a lab setting.”

“Both collaborative effort and patient empathy are incredibly important in this profession, so this project contributed much towards that.”

“I got to help my classmates understand that being color blind doesn't have to limit what you do in life, it might even make you unique. I got to understand what color blind people see, which can help me explain it to other people later on.”

“This project helped us understand the underlying mechanisms of the condition we were presented with which will be helpful for us in the future as working optometrists.”

Potential Impact: Students found the work on the project enjoyable and helpful. We believe that the project will help to enhance observation and interpretation skills, create awareness of patients' possible visual abnormalities, promote empathy, compassion and perspective-taking, allow students to recognize assumptions and mitigate biases.

References:

- 1) Fragkos K.C. and Crampton P.E.S. (2020)' The Effectiveness of Teaching Clinical Empathy to Medical Students: A Systematic Review and Meta-Analysis of Randomized Control Trials'Academic medicine : journal of the Association of American Medical Colleges, 95 (6), pp. 947-957
- 2) Zhou, Y.C., Tan, S.R., Tan, C.G.H. et al (2021)'A systematic scoping review of approaches to teaching and assessing empathy in medicine', BMC Medical Education, 21(1), pp. 292-307

Faculty Development to Enhance Active and Interactive Teaching Skills
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Idea: Stop talking at me! A faculty development initiative to improve the use of interactive teaching strategies by faculty in a resident curriculum.

Need: The shift to competency-based medical education (CBME) across the medical education continuum emphasizes the expectation that learners be central to and take an active role in their own learning. CBME is supported by the principles of andragogy and adult learning theory (ALT) – that adult learners, such as medical trainees, are self-motivated, self-directed, and problem-driven. Additionally, cognitive learning theory emphasizes the importance of active learning, helping learners engage with the material and thus better retain information. However, many faculty members were trained using a pedagogical approach, which is teacher-centric and relies on passive participation of the learner, and they may not be facile using an andragogical approach to teaching. Therefore, there is a need for faculty development focused on the effective use of ALT-driven and interactive methods in their teaching. Utilizing the Kern 6-step framework for curriculum development, we propose a faculty development initiative to improve the use of active and interactive teaching strategies by faculty in a neonatology rotation didactic curriculum for pediatric residents.

Methods: The Johns Hopkins All Children's Hospital pediatric residents complete NICU rotations during the PGY-1 and PGY-2 years. Rotation-specific educational sessions include simulations, case presentations, and didactics on core neonatal topics. Trainee rotation evaluations indicated a need to enhance the quality, effectiveness, and interactive nature of the didactic sessions. Additionally, in-training exam (ITE) scores related to neonatal care highlighted the need to improve resident medical knowledge in this domain. With a focus on ALT and the use of active and interactive learning methods, the neonatology core didactic curriculum was restructured utilizing a variety of interactive teaching strategies such as flipped classroom, content creation, problem-based learning, and case-based discussions. This novel curriculum was piloted by the rotation director, consisting of iterative cycles with formative feedback from learners to guide further improvements. Two additional neonatology faculty were invited to facilitate a didactic session. Each was directly observed by the rotation director, who provided feedback and coaching on how to enhance the interactive components of their sessions. Data and feedback from these two stages of the pilot will be used to inform the design and delivery of an "interactive learning workshop" to the remaining neonatology faculty, who will then be integrated into delivery of the core didactics and provided direct observation with feedback and coaching.

Evaluation Plan: We will utilize the Kirkpatrick model to evaluate the effectiveness and value of this faculty development initiative. 1) Reaction- Faculty evaluations of the interactive learning workshop and the direct observation and coaching experience; 2) Learning- Faculty self-assessment of knowledge, confidence, and competence related to active and interactive teaching skills before and after the interactive learning workshop, and then again after the delivery of 3 didactic sessions; 3) Behavior- Direct observation and coaching sessions to assess incorporation of interactive strategies; Metrics on trainee rotation evaluations related to the quality, effectiveness, and interactive nature of the didactic sessions ; 4) Results- Trainee pre- and post-tests for each neonatology rotation and Trainee ITE scores related to neonatal care will be a reflection of changes in trainee medical knowledge.

Potential Impact: The concepts and content provided to the faculty will have impact on their ability to teach the residents and other providers. The medical knowledge and overall educational experience of the residents on the rotation will be enhanced. The "interactive learning workshop" can be replicated in other disciplines, training programs, and institutions

References:

- 1) Collins J. Education techniques for lifelong learning: principles of adult learning. *Radiographics*. 2004 Sep-Oct;24(5):1483-9. doi: 10.1148/rg.245045020. PMID: 15371622.
- 2) French H, Arias-Shah A, Gisondo C, Gray MM. Perspectives: The Flipped Classroom in Graduate Medical Education. *Neoreviews*. 2020 Mar;21(3):e150-e156. doi: 10.1542/neo.21-3-e150. PMID: 32123119.
- 3) van Schaik SM. Accessible and Adaptable Faculty Development to Support Curriculum Reform in Medical Education. *Acad Med*. 2021 Apr 1;96(4):495-500. doi: 10.1097/ACM.0000000000003804. PMID: 33060398

Galveston Art & Music Therapy Program for Individuals with Disabilities: A Pilot Curriculum

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Idea: An adaptive art and music therapy program to increase social and emotional well-being for individuals with intellectual and/or physical disabilities.

Need: Individuals with physical and/or intellectual disabilities in Galveston County, TX have few community resources outside of the Christina Sullivan Foundation (CSF), a nonprofit created to assist their population, that can provide opportunities for holistic engagement with their families. While CSF currently provides an opportunity for these individuals and their families to participate in sports, there is a lack of community-based programs designed to facilitate engagement with the arts and music. Art and music therapy have been shown to reduce pain, decrease anxiety and stress, positively improve mood, and aid in managing emotional conflicts (1,3). This is particularly important for individuals with intellectual disabilities, as art and music provide them with additional avenues to communicate nonverbally and express their emotions in a healthy, creative manner (2). We have partnered with CSF to offer an adaptive art and music therapy program, funded by the University of Texas Medical Branch Office of Community Engagement and Interprofessional Education. Our program will create an accessible, creative outlet for self-expression, emotional processing, and communication that complements other resources available in Galveston.

Methods: The six-week Art & Music Therapy Program in Galveston creates a safe space for the participants (Artists) and their families to express themselves through artistic mediums and will be offered yearly beginning in January. Participants will meet in groups of 4-5 for 1.5 hours each week to listen to different genres of music, experience playing various musical instruments, and create visual art using various media such as drawings, paintings, and/or craft activities. This will allow Artists to further reflect on and express how the music they have experienced makes them feel or reflect on memories.

To facilitate this process, we have created a sample curriculum that follows a broad outline each week including:

- 1) Welcome Song: Song played as Artists settle into their groups.
- 2) Sing Along: Artists can sing along to some classics on the karaoke machine or as a whole group.
- 3) Movement Song: Artists can sing along to some classics on the karaoke machine or as a whole group.
- 4) Rhythm Circle: Group leaders will tap a rhythm on a drum set or other percussive instrument. Artists will repeat rhythm with bongos, maracas, etc. This portion can include call and response or cannon style repetitions.
- 5) Art Activity: Activities to encourage Artists to use diverse art media to express emotions and practice communicating the essence of songs.
- 6) Wind Down Song: A calming song that signals clean up and gets the group ready to settle down.

Evaluation Plan: We plan to evaluate our program by administering surveys to the Artists and their families before and after the program. We aim to measure whether Artists feel like the program has had any impact on 1) how they view art or music and, 2) any connections that the music has made with their emotions. We will also ask their caretakers to evaluate whether they feel like the Artists have had any change in the ways in which they communicate their emotions and handle stress. Furthermore, there will

be a reflective portion in which Artists, volunteers, and families may provide any suggestions or comments. We plan to administer these surveys during an on-going basis of the program so that we may continue to enhance the experience.

Potential Impact: This program builds on existing services and fills a much-needed gap for individuals with disabilities to interact mindfully with the arts. By providing a supportive space for self-expression, we seek to improve confidence, stress levels, methods of communication, and find new ways to engage with their peers, families, and the broader community.

References:

- 1) Moola FJ, Moothathamby N, Naganathan M, Curran CJ, Yerichuk D, McPherson AC. A scoping review of music therapy in the lives of children and youth with disabilities and chronic conditions in non-acute medical and community-based settings: A novel consideration for art therapists? (étude de portée de la musicothérapie dans la vie des enfants et des jeunes Ayant des incapacités et des états chroniques en milieux médical et communautaire de soins non actifs : Une Nouvelle considération pour les art-thérapeutes ?). *Canadian Journal of Art Therapy*. 2020;33(1):17-28.
doi:10.1080/26907240.2020.1753461
- 2) Hackett SS, Ashby L, Parker K, Goody S, Power N. UK art therapy practice-based guidelines for children and adults with learning disabilities. *International Journal of Art Therapy*. 2017;22(2):84-94.
doi:10.1080/17454832.2017.1319870
- 3) Wigram T, Gold C. Music therapy in the assessment and treatment of autistic spectrum disorder: clinical application and research evidence. *Child Care Health Dev*. 2006;32(5):535-542.
doi:10.1111/j.1365-2214.2006.00615.x

Teaching Outside the Lines: Using Art to Enhance Mental Status Exam Skills

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Idea: Incorporating artistic training into a psychiatry clerkship curriculum to teach students how to craft complete and accurate mental status exams.

Need: Training in the arts provides medical students with improved clinical observation skills, diagnostic reasoning, and empathy. [1-4] However, the majority of curricula integrating the arts into medical education focus on preclinical students, and none target psychiatry clerkship students. [5]. There is sparse literature regarding innovative means for teaching and practicing the mental status exam (MSE) [7, 8], a key diagnostic tool in psychiatric assessments, making novel curricula related to the MSE of particular importance. Our pilot will examine how artistic training may enhance descriptive and observational skills, as related to the MSE. Our goal is to pilot a high-yield, time-efficient artistic training experience that can be easily incorporated as an innovative educational tool for students rotating through their core psychiatry clerkship.

Methods: All medical students from Keck School of Medicine will participate in a 1 hour workshop during the beginning of their psychiatry clerkship. Each workshop will consist of 2 activities over Zoom. The first exercise, "Drawers & Describers," will focus on teaching description skills. Students will be paired off in breakout rooms with one being the "drawer" and the other the "describer," the latter of whom will use MSE-related language to describe an image as the other utilizes these descriptors to sketch a corresponding picture. Roles will switch after 10 minutes using a different painting. Once completed, the students will come back together and the source images will be revealed leading to a rigorous discussion about what worked or didn't work as well as the importance of descriptive accuracy within the field of psychiatry. Exercise two, "Looking for 30 Seconds", will focus on observational skills. Everyone will observe a painting for 30 seconds, first as a whole and then by quadrants (looking at each quadrant for 30 seconds for a total of 2 minutes), writing down their observations. This will lead to a discussion focused on habits of observation, as related to formulating an MSE.

Evaluation Plan: Prior to each workshop, students will take a baseline survey evaluating their attitudes relating to self-descriptive skills, self-observation skills, and psychiatric education. After each class, students will repeat the same survey but with additional questions soliciting feedback of the session. In future sessions, we also hope to implement a pre- and post-workshop mental status exam exercise assessing whether medical students are able to demonstrate improvements in the accuracy and comparability of their MSEs after completing the session.

Potential Impact: This pilot will be one of the first extensive arts-based medical curricula designed for clinical psychiatry students. Results may serve as a framework to further develop arts-based psychiatry curricula. Additionally, there may be application to non-psychiatric fields that rely on descriptive/observation skills (i.e. pathology, dermatology).

References:

- 1) Bell LT, Evans DJ. Art, anatomy, and medicine: is there a place for art in medical education? *Anatomical Sciences Education*. 2014;7(5): 370-378. doi:10.1002/ase.1435.
- 2) Braverman IM. To see or not to see: How visual training can improve observational skills. *Clinics in Dermatology*. 2011;29(3):343-346. doi:10.1016/j.clindermatol.2010.08.001.
- 3) Jasani SK, Saks NS. Utilizing visual art to enhance the clinical observation skills of medical students. *Medical Teacher*. 2013;35(7). doi:10.3109/0142159x.2013.770131.

4. Gurwin J, Revere KE, Niepold S, Bassett B, Mitchell R, Davidson S, DeLisser H, Binenbaum G. A randomized controlled study of art observation training to improve medical student ophthalmology skills. *Ophthalmology*. 2018;125(1), 8-14. doi:10.1016/j.ophtha.2017.06.031.
5. Mukunda N, Moghbeli N, Rizzo A, Niepold S, Bassett B, DeLisser HM. Visual art instruction in medical education: a narrative review. *Medical Education Online*. 2019;24(1). <https://doi.org/10.1080/10872981.2018.1558657>.
6. Sandrone S, Berthaud JV, Carlson C, Cios J, Dixit N, Farheen A, et al. Active learning in psychiatry education: current practices and future perspectives. *Frontiers in Psychiatry*. 2020;11. doi:10.3389/fpsy.2020.00211.
7. Huline-Dickens S, Heffernan E, Bradley P, Coombes L. Teaching and learning the mental state exam in an integrated medical school. Part I: Student perceptions. *The Psychiatric Bulletin*. 2014;38(5), 236-242. doi:10.1192/pb.bp.113.042655.
8. Martin A, Krause R, Jacobs A, Chilton J, Amsalem D. The mental status exam through video clips of simulated psychiatric patients: an online educational resource. *Academic Psychiatry*. 2019;44(2), 179-183. doi:10.1007/s40596-019-01140-9.

Enchanting Medical Education: The Influence of Magic Training on Medical Students' Competence

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Idea: Assessing the effect of magic training on medical students' competence in enhancing patient comfort and building rapport during pediatric clerkships.

Need: Magic therapy, a holistic approach to patient care that healthcare professionals use magic tricks therapeutically with traditional medicine, has shown to reduce patient's anxiety and stress, enhance memory and cognitive skills, boost self-esteem, and improve fine motor skills through sleight of hand tricks.¹ Interestingly, magic has been shown to have clinical benefits for healthcare professionals, especially in a pediatric inpatient setting. For example, dentists who incorporated magic tricks into difficult patient encounters were able to elicit cooperation, permitting their dentists to take more radiographs.² Additionally, medical students from the Renaissance School of Medicine at Stony Brook University who volunteered to present and teach magic tricks to pediatric patients through the MagicAid program reported gaining familiarity with the hospital, developing communication skills and empathic qualities, and improving psychological health.³ Therefore, the application of magic therapy serves as a dual benefit, offering advantages to both healthcare professionals and patients. The objective of the study is to explore the benefits of magic on medical students' competence, specifically confidence and rapport-building abilities.

Methods: The study will utilize a blind, randomized study design that will include a total of 60 third-year medical students on their pediatrics rotation. Each cohort of 20 students will be randomly divided into a control group of 10 students and an intervention group of 10 students. A magic training video will be shown to the intervention group, while a placebo video demonstrating how to help children calm down will be shown to the control group. The random assignment of students into the control and intervention groups will be conducted using a randomization algorithm or a random number generator to ensure an unbiased distribution.

All 20 participants of the cohort will be asked to complete two online questionnaires. The first questionnaire will be administered in week 2 of their rotation, and will be completed by all 20 students to establish their baseline responses. The second questionnaire will be administered during week 6 of the rotation, and will be compared to the baseline responses to gauge the effectiveness of the intervention. The primary outcome measure will be the difference in post-survey responses between the control group and the intervention subgroup, as well as differences in pre and post-survey responses for each respondent. Variables assessed include patient satisfaction and cooperation, as well as medical students' perceived self-capability, self-esteem, and rapport-building skills.

Evaluation Plan: The intervention and control arm will be evaluated using a pre- and post-survey to assess for significant differences in medical student's confidence, comfortability around patients, and ability to build rapport. The degree of confidence will be assessed based on perceived performance during the rotation. The level of comfort of medical students will be evaluated by how at ease the students felt when interacting with patients and their ability to handle challenging encounters. Establishment of patient rapport will be defined based on thoroughness of the patient's history and physical examination, as well as subjective interpretation from the participants.

Twenty students per cohort was chosen for feasibility, which called for three cohorts totaling 60 students. This sample size ensures sufficient statistical power to detect significant differences between groups, assuming an effect size consistent with the expected changes from the interventions.

Thereafter, statistical analyses, like t-test, Fischer's exact, and qualitative analysis, will be used to compare post-survey responses between the control and intervention groups, to identify any significant improvements while accounting for natural improvements occurring over time.

Potential Impact: By understanding how magic therapy can provide advantages to medical students, magic therapy programs can be expanded to other medical institutions and even incorporated into their curriculum. Future directions include assessing and expanding the effects of magic therapy on pediatric patients in other specialities.

References:

- 1) Lam, M. T., Lam, H. R., & Chawla, L. (2017). Application of magic in healthcare: A scoping review. *Complementary therapies in clinical practice*, 26, 5–11. <https://doi.org/10.1016/j.ctcp.2016.11.002>
- 2) Peretz, B., & Gluck, G. (2005). Magic trick: a behavioural strategy for the management of strong-willed children. *International journal of paediatric dentistry*, 15(6), 429–436. <https://doi.org/10.1111/j.1365-263X.2005.00668.x>
- 3) Pravder, H. D., Elkin, D. J., Post, S. G., & Chitkara, M. B. (2022). An Innovative Program Using Magic to Provide Early Clinical Experiences for Preclinical Medical Students: Goals, Experiences, and Results of the MagicAid Program. *Medical science educator*, 32(1), 111–120. <https://doi.org/10.1007/s40670-021-01456-y>

Perspectives On Near-Peer Programming: Challenges and Solutions

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Problem Statement: Tutors' experiences and perceptions in a Midwestern near-peer tutoring (NPT) program are studied to understand the challenges and proposed solutions.

Rationale: Tutors in Midwestern Near Peer Tutoring (NPT) programs are learners and educators, providing unique perspectives on the program's effectiveness and opportunities for improvement. Their insights are essential for fine-tuning the curriculum and teaching methods, especially since tutors may be closer in age and experience to their students.

Ultimately, by focusing on challenges and proposed solutions, this study aims to constructively improve the program and contribute to addressing systemic issues in medical education, such as burnout, educational equity, and the rapid pace of healthcare innovation.

In summary, a study on tutors' experiences and perceptions in a Midwestern NPT program is a critical undertaking with the potential to significantly impact the quality of medical education, both locally and beyond.

Methods: A mixed-methods approach was employed, encompassing an online survey and focus group interviews.

In order to gain a comprehensive understanding of the experiences and perceptions of students enrolled in the Near-Peer Tutoring (NPT) program, we employed a mixed-methods approach, which involved collecting both quantitative and qualitative data.

We first conducted an online survey, which was distributed to all M2 students enrolled in the NPT program. The survey consisted of a mix of closed-ended and open-ended questions, designed to assess students' satisfaction with the program, their experiences with their tutors, and their suggestions for improvement.

We then conducted a series of focus group interviews with M2 students who had volunteered to participate. The focus group interviews were semi-structured, allowing us to explore students' experiences and perceptions in more depth.

A total of 55 students (60% response rate) completed the online survey, and 8 students participated in the focus group interview. The data from both the survey and the focus group interviews were analyzed using a combination of quantitative and qualitative methods.

The mixed-methods approach we employed allowed us to collect a wide range of data from a variety of sources. This enabled us to gain a more comprehensive understanding of the students' experiences and perceptions of the NPT program and to identify areas where the program could be improved.

Results: Quantitative results indicated that the majority of tutors experienced increased teaching confidence (71%) and improved teaching skills (66%). Program features students weighted most important included a logical course structure (91%) and clearly explained requirements (82%). Qualitative analysis showed 5 main challenges: 1) lack of feedback for tutors, 2) ineffectiveness of didactic seminars, 3) mismatch between tutor expertise and 1-on-1 session content, 4) insufficient faculty guidance, and 5) ambiguity of program expectations. Emerging themes identified 5 proposed solutions to address these issues.

Theme 1: Marketing NP tutoring opportunities to learners

Solution: Partner with student representatives to publicize the sign-up platform early and distribute flyers for NPT program events.

Theme 2: Junior students not aware of effective study strategies

Solution: Host a "How to Study" orientation for junior students.

Theme 3: Junior students benefit from more informal tutoring opportunities

Solution: Implement bi-weekly virtual office hours hosted by 2-3 tutors.

Theme 4: Lack of recognition for outstanding teaching

Solution: Create a nomination system for outstanding tutors, with the winner receiving an honorarium.

Theme 5: Need for more study resources

Solution: Create a shared resource library for faculty and tutors to store and share high-yield topics and other useful resources.

These innovations could provide tutors with a more effective learning experience.

Potential Impact: Near-Peer Tutoring (NPT) program review identified key areas for improvement:

(1) Boost visibility by holding drop-in tutoring sessions; (2) standardize resources to address inconsistencies in teaching experience amongst tutors; (3) prepare new students with a "How to Study" orientation; (4) Promote quality teaching with a tutor recognition system.

References:

- 1) Fuchs, Michael A., Andrea W. Schwartz, Julia B. Caton, Holly Gooding, and Jeremy B. Richards. "Defining Student-as-Teacher Curricula in the Absence of National Guidelines: An Innovative Model." *Academic Medicine* 97, no. 6 (2022): 832-838.
- 2) Gottlieb, Z., Epstein, S., & Richards, J. (2017). Near-peer teaching programme for medical students. *The clinical teacher*, 14(3), 164-169.
- 3) Freret, Taylor, Jasmine Rana, Richard M. Schwartzstein, and Holly C. Gooding. "Twelve tips for implementation of "student-as-teacher" programs." *Medical Teacher* 39, no. 12 (2017): 1221-1226.

Envisioning a Student-Driven Near-Peer Mentorship Community: Lessons from the MedMentors Initiative

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Idea: Our ever-changing medical education landscape requires students to maximize near-peer connections for strategic mentorship and community-building.

Need: In an effort to adjust to evolving medical research and educational best practices, the template for medical education today is vastly different from even as little as three years ago. Perhaps most notably, the United States Medical Licensing Examination (USMLE) Step 1 transitioned from a numerical to a pass/fail grading structure in 2022. Many preclinical medical students have been left feeling pressure to stand out while lacking the knowledge of how to set themselves apart. Additionally, some socially vulnerable students lack mentors who can fully understand the pressures and struggles they now face. It can be even more challenging for students to build community when they do not see mentors who identify similarly to them. Educational research documents the additional challenges faced by students who are nationally underrepresented in medicine (URiMs); the first in their families to enter medical school; or otherwise vulnerable to social exclusion in such a nuclear, competitive field (1-6). In turn, medical educators have recognized the value of near-peer mentorship (7) in bridging gaps between leadership and increasingly diverse student populations (8).

Methods: In 2023, the MedMentors initiative began its pilot year on the main campus at the University of Kentucky College of Medicine (UKCOM), with 22 second-year medical students from diverse backgrounds each selected to personally mentor six-to-eight first-year medical students ($n = 137$ mentees) in a one-on-one near-peer mentorship relationship. This initiative was developed to harness enthusiasm among medical students in their support of new trainees in this uncertain educational climate, with the added benefits of formal recognition of students' mentoring efforts and an opportunity to foster community both between mentors and mentees and among mentors themselves. In this program, second-year MedMentors are assigned first-year mentees who make up a small-group doctoring course section which meets weekly from August through March of the first year of medical school. Because of the small-group, in-person setting of the initial mentoring context, we anticipate that mentorship connections can then extend throughout both the mentors' and mentees' medical training. This initiative requires mentors to send check-in emails to their mentees; attend monthly discussion-based sessions or skills training events with their mentees; and reach out individually to meet with their mentees 1-1. Additionally, MedMentors meet together monthly to build their own community, discuss ideas and challenges, and learn about the role of mentoring in academic medical careers.

Evaluation Plan: The current pilot year of MedMentors includes a qualitative data collection plan for initial program evaluation, with plans for a quantitative survey measuring mentorship connections to begin during the next academic year. MedMentors currently submit quarterly reflections which capture the scope of the program's growing impact both on them personally and on their mentees. Mentors can elect to include each reflection in the initiative's anonymized research database (IRB #88515) as well for inclusion in later publications based on the program.

A key goal is to keep the entire program as student-driven as possible while it evolves and to provide evaluation, assessment, and research experiences for MedMentors. Mentors meet quarterly with the program's faculty leaders to discuss their personal interests, goals, progress, and ideas. Mentors collectively manage records of the first-year cohort's needs, including documentation of email check-ins; 1-1 meetings; class visits; and specific needs. Assigned mentors can thus help connect their mentees with other mentors who can share guidance, such as for preparing to enter a competitive specialty or support during a life event.

Potential Impact: MedMentors is a scalable mentorship program with value both for mentored trainees and mentors, who can be the next generation of academic medical leadership. The initiative provides a pathway towards academic medicine for diverse students who may not be recognized for mentoring roles or given a chance to build medical education experience.

References:

- 1) Sims, L. (2022). Into the unknown: Experiences of social newcomers entering medical education. *Academic Medicine*, 97(10), p. 1528-1535. DOI:10.1097/ACM.0000000000004762
- 2) Nimmons, D., Giny, S., & Rosenthal, J. (2020) Medical student mentoring programs: current insights. *Advances in Medical Education and Practice*, 10, p. 113-123. DOI:10.2147/AMEP.S154974
- 3) AAMC (2019). Diversity in medicine: Facts and figures 2019. Aamc.org. <https://www.aamc.org/data-reports/workforce/report/diversity-medicine-facts-and-figures-2019>.

Tackling Step 1 Pass/Fail Challenges: A Student-Led Initiative

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Problem Statement: Medical schools are adapting to the new pass/fail Step 1, but students require immediate structured guidance to navigate these changes.

Rationale: On January 26th, 2022, the United States Medical Licensing Examination (USMLE) Step 1 examination, the first of three pivotal licensing exams, changed score reporting criteria from a three-digit score to pass or fail (P/F). Historically, the Step 1 score was a crucial factor in residency applications. This created the conundrum of "parallel curriculums," as students concurrently studied for their school exams and Step 1. Consequently, students' stress levels increased while their interaction in extracurricular activities decreased (1). The intent behind the scoring shift aimed to enhance student well-being, foster core competencies like communication and teamwork, increase accessibility for underrepresented students in medicine, and revert to the exam's original P/F intent (2). Student tutors at the University of California, Irvine, School of Medicine (UCISOM) sought to increase the services provided to students experiencing the first full academic year with Step 1 P/F.

Methods: Following a national and institutional decrease in Step 1 pass rates in 2022 (3), student leaders collected data from the first cohort of students at UCISOM to take a P/F Step 1. The goal was to identify potential correlations with our institution's increased failure rates. Medical student tutors, as part of the Collaborative Learning Communities (CLC) with Medical Students as Teachers (MSAT) program at UCISOM, used survey responses to create a schedule of informative Zoom sessions for the second-year students (~114) that spanned from August 2022 to April 2023. The sessions' primary goals were to provide students with early exposure to the challenges of studying for Step 1 and to emphasize the continued difficulty of the exam. Nine total sessions were held, covering topics such as "Things we wish we knew," "How to form a Dedicated study schedule," and "High Yield Step 1 Rapid Review Session." Other sessions included panels, working through practice problems with an upper-class tutor, and open office hours. All sessions were conducted using Zoom video conferencing. Furthermore, the CLC-MSAT program established a Step 1 Buddy Support system on an opt-in basis in which 10 MSATs were paired with 18 second-year students to provide continuous tutoring and mentorship during the Step 1 dedicated study period. Following these implementations, a similar survey, with additional questions aimed at assessing the efficacy of the new sessions, was administered in May and July 2023.

Results: UCISOM's passing rate for the first cohort to take Step 1 as P/F was 92%. 96% of survey respondents (n=78) students reported being told "Step 1 is P/F, it's easy, don't worry about it," 79% felt they were not properly advised on the difficulty of passing Step 1, and 41% felt having a P/F Step 1 reduced their stress. UCISOM's passing rate for the second cohort to take Step 1 as P/F was 97%. Of survey respondents in that cohort (n=83), 70% reported being told, "Step 1 is P/F, it's easy, don't worry about it," 16.8% felt they were not properly advised on the difficulty of passing Step 1, and 60% felt having a P/F Step 1 reduced their stress. Additionally, we directly assessed the efficacy of the CLC-MSAT Step 1 specific sessions. Based on the question "I felt the Step 1 sessions put on by CLC were useful," we found that on a Likert scale from 1-5 where a score of 1 is "strongly disagree" and a score of 5 is "strongly agree," students reported these sessions as a mean score of 3.1 (n=59). Attendance at each MSAT-organized Step 1 preparation session ranged from 10 to 60 students. Overall, when comparing 2022 Step 1 test takers to those who tested in 2023, UCISOM students reported a 62% decrease in feeling inadequately advised on the test's difficulty and a 5% increase in the overall passing rate.

Potential Impact: The significant alteration in scoring for one of United States medical students' most historically crucial licensing exams required adaptation to properly advise students. In response to this

change, UCISOM MSATs instituted an 8-part Step 1 preparatory series to help increase preparedness and passing rates for our students.

References:

- 1) Baniadam K, Elkadi S, Towfighi P, Aminpour N, Sutariya R, Chen HC. The Impact on Medical Student Stress in Relation to a Change in USMLE Step 1 Examination Score Reporting to Pass/Fail. *Med Sci Educ.* 2023;33(2):401-407. Published 2023 Feb 27. doi:10.1007/s40670-023-01749-4
- 2) USMLE Step 1 moves to pass-fail: Answers to 7 key questions. <https://www.ama-assn.org/medical-students/usmle-step-1-2/usmle-step-1-moves-pass-fail-answers-7-key-questions>
- 3) Performance Data | USMLE. www.usmle.org. <https://www.usmle.org/performance-data>

Reclaiming Our Roots: Principles for Recruiting/Retaining URiM Residents & Faculty-Family Medicine

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Idea: To determine the modalities that the AHWm Family Medicine Residency Program utilizes to recruit, retain, and develop URiM residents and faculty.

Need: Given the expected impact of the SCOTUS decision on Affirmative Action, alternative paths to continuing efforts to increase diversity, equity, and inclusion in family medicine are critical. There is a need for more URiM (Underrepresented in Medicine) residents and faculty to better serve the communities in which they grew up in. Universities, Medical Schools, Residency Programs and Hospital Institutions across the nation lack the diversity that exists in America. For example, there is a growing US population of Latinos: 62.57 million people in 2020. However, there are over 1 million doctors in the US and only 6% are Hispanic, which is roughly 64,626 doctors who identify as Latino/a. That is too many patients for only 6% of the medical profession that can potentially speak the patient's language. To close this significant gap, it is important to increase the numbers of URiM in all different stages of the medical profession from undergraduate medical education to graduate medical education to faculty cohorts. This project will look at what the program has done to increase the numbers of URiM medical students, residents and faculty, and identify the factors that play a role in recruiting more diverse residents.

Methods: Goals: Identify concrete pathways to recruit, retain and develop URiM faculty and residents by asking the alumni from the Adventist Health White Memorial (AHWM) Family Medicine Residency Program about their experiences during residency.

The project is a qualitative study of the professional practice experience of the alumni of the Adventist Health White Memorial (AHWM) family medicine program. The residency graduated 70 alumni during the 2013-2022 period. Every year the residency uses the Provider Identification Number to track practice location, and to specifically identify those located in a Medically Underserved Area (MUA.) All seventy (70) AHWm family medicine alumni (MUA or non-MUA practice) will be invited to participate in one of the 60-90 minute virtual and/or in-person focus groups slated to be conducted in 2024. These focus groups will help us identify the characteristics of transformative experiences and newfound sources of meaning and purpose in their professional journey. The valuable learning of rediscovering professional roots and meaningful experiences will inform the development of a medical learning community and professional network of family medicine physicians serving URiM patient populations that can provide support mentoring and identify opportunities for career development, creating a sense of community and inclusion in family medicine.

Evaluation Plan: The evaluation process will include analyzing the results from these focus groups and identify the characteristics as to why URiM residents and faculty chose AHWm to work in a medically underserved community. These personal transformative experiences and newfound sources of meaning and purpose in their professional journey will help guide the medical learning community and professional network of family medicine physicians serving URiM patient populations. The purpose of these focus groups is to identify how the medical community can provide mentoring, support URiM and recognize opportunities for career development, creating a sense of community and inclusion in family medicine. To evaluate our project, we will be assessing the next cohort of residents to see if these new findings are aligned with past cohort experiences.

Potential Impact: Family medicine residency programs need to critically reflect on their past successes and challenges with recruiting and retaining URiM physicians. This project will allow programs to realize how they can achieve diversity in their resident pool and inform others how to create more opportunities for URiM residents and faculty.

References:

- 1) Kost, A, Phillips, J, Polverento, M. The Influence of Role Modeling and Mentorship on Primary Care Career Choice: What Can Be Gleaned from 30 years of Research? *Family Medicine*. 2022;54(7):555-63.
- 2) Roberts, S, Nehemiah, A, Butler, P. Mentoring Residents Underrepresented in Medicine: Strategies to Ensure Success. *Journal of Surgical Education*. 2020; 78(2): 361-365
- 3) Wyatt, T, Rockich-Winson, M, Taylor, T. What does context have to do with anything? A Study of Professional Identity Formation in Physician-Trainees Considered Underrepresented in Medicine. *Academic Medicine*. 2020;95(10): 1587-1593.

Accreditation Council of Graduate Medical Education (ACGME) Accreditation Corrections

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Problem Statement: Education Program Coordinators and Program Directors are experiencing a higher rate of initial accreditation application errors needing to be revised.

Rationale: Due to lack of a standardized process, lack of Program Director support, and increasing requirements from the Accreditation Council of Graduate Medical Education, Education Program Coordinators are experiencing a higher initial accreditation application submission rate that in turn, is causing a higher rate of application errors needing revisions. Our goal is to provide a standardized accreditation process, increase PD education and support, and increase EPC management oversight. These action items will decrease the number of corrections received by the accreditation team by a goal of 20% without adversely impacting the level of support that the EPC can provide to their other program(s).

Methods: Our project targeted 9 Education Program Coordinators who have recently underwent or are currently undergoing the initial accreditation application process. Our goal and aim is to decrease the amount of corrections received from our accreditation team by 20%. Our timeline began on February 14, 2023 with a target end date of May 31, 2023. Data collect tools included an 8-question ACGME accreditation survey that was distributed to 9 EPCs gathering feedback of their application experience, a fishbone diagram outlining the people, methods, measurements, and environment, a SIPOC+R chart (supplier, input, process, output, customer, and requirement), as well as the actual application feedback that was reviewed by management to assess progress.

Results: Through creating a standardized accreditation process, Program Director education and support, and increased EPC management oversight, the initial accreditation application errors needing revisions was decreased by 56%, succeeding the overall goal of 20%. This was accomplished without adversely impacting the level of support that the EPC provides to their other program(s).

Potential Impact: Impacts have included successful accreditation status, lessening the impact of the required EPC time allocation to other programs, and avoidance of EPC burnout by providing adequate support and knowledge through the application process.

References:

- 1) ACGME Answers: Establishing New Sponsoring Institutions and Accredited Programs. (2023, April 05). [www.ACGME.org. https://www.acgme.org/newsroom/blog/2023/acgme-answers-establishing-new-sponsoring-institutions-and-accredited-programs/](https://www.acgme.org/newsroom/blog/2023/acgme-answers-establishing-new-sponsoring-institutions-and-accredited-programs/)
- 2) Program Applications. (N.D.). [www.ACGME.org. https://www.acgme.org/programs-and-institutions/programs/program-application-information/](https://www.acgme.org/programs-and-institutions/programs/program-application-information/)

Trainee Attitudes, Practices, and Documentation of Hookah and E-Cigarette Use

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Idea: A quality improvement project to assess resident and medical students' attitudes, clinical practices, and documentation for e-cigarette and hookah use.

Need: The alarming rise in non-cigarette smoking practices presents a significant public health concern with nearly one in twenty US adults reporting e-cigarette usage in 2019 (1). Hookah, the second most prevalent smoking method in the US, has been used by 13.5% of high school students in the last year and 38.1% of Arab adults in Michigan report ever using Hookah (2, 3). Additionally, Hookah use often carries the misconception of being less harmful than traditional cigarette smoking. While physicians regularly inquire about tobacco smoking, the extent to which they screen for e-cigarette and hookah use remains uncertain. Furthermore, the comfort level of resident physicians in discussing e-cigarettes and hookah and documenting their usage in electronic health records (EHR) is not well-established. Our quality improvement study seeks to explore the frequency of resident and medical students' inquiries and documentation regarding e-cigarette and hookah use, along with their knowledge and attitudes toward this emerging public health concern.

Methods: A 60-question Qualtrics survey will be distributed to residents and medical students of participating institutions to examine their attitudes, history taking, clinical management including counseling practices, and documentation related to e-cigarette and hookah use. The primary coordinating center is Wayne State University / Detroit Medical Center (DMC); however, we will be coordinating with several other U.S. medical institutions to expand our participant base as our study progresses.

Evaluation Plan: Prior to the administration of our survey, we will be recruiting partner institutions. We specifically plan to invite institutions in areas where e-cigarette and hookah use are more common. Our survey primarily involves questions on a 5-point Likert scale. We will quantitatively assess and provide descriptive statistics on the following domains: (1) trainee attitudes towards E-cigarettes and/or hookah, (2) EHR documentation practices, and (3) clinical management including counseling practices. Trainee attitudes will assess comfortability asking patients about e-cigarette and hookah use, as well as trainees' prior education on these topics. Questions on the EHR will specify how often medical students and residents document e-cigarette and hookah use in their patient notes. Lastly, clinical management questions will inform to what extent residents and medical students are engaging in cessation discussions and what resources they most commonly provide to their patients.

Potential Impact: Findings from this study will improve our understanding of resident and medical students' comfort levels in addressing and documenting e-cigarette and hookah use. By doing so, we hope to inform future clinical practice and medical education interventions to improve the management of patients who use hookah and e-cigarettes.

References:

- 1) Kramarow, E. A., & Elgaddal, N. (2023, July). Current Electronic Cigarette Use Among Adults Aged 18 and Over: United States, 2021. NCHS Data Brief No. 475). Hyattsville, MD: National Center for Health Statistics.
- 2) Johnston DL, Miech RA, O'Malley PM et al. (2019). Monitoring the Future National Survey Results on Drug Use 1975-2018: Overview of Key Findings on Adolescents Drug Use. Ann Arbor: Institute for Social Research, University of Michigan.
- 3) Hekman K, Weir S, Fussman C, Lyon-Callo S. (2015). Health Risk Behaviors Among Arab Adults Within the State of Michigan: 2013 Arab Behavioral Risk Factor Survey. Lansing, MI: Michigan

Can Basic Medical Sciences Course Success Be Predicted from Prior Undergraduate Course Performance?

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Problem Statement: Medical Schools are planning to mandate prerequisite undergraduate Biochemistry/Microbiology/Physiology/Anatomy courses as their admissions criteria.

Rationale: Many Medical Schools are changing their requirements for admission to the Doctor of Medicine (MD) program with a prerequisite of Biochemistry/Microbiology/Physiology/Anatomy courses for their incoming classes so that the incoming students will be better prepared for the rigor of the medical school curriculum. At Mercer University School of Medicine (MUSM), we offer post-baccalaureate Master's Programs (Master of Science in Preclinical Sciences and Master of Science in Biomedical Sciences) which prepare students aiming for admission to MD programs. A required course, the Biochemistry and Molecular Genetics course (BMG) is part of this Master's curriculum and is rigorous and comparable to similar courses offered by MD programs. We examined the relationship between our graduate students' undergraduate performance in specific courses with regard to success in BMG for possible changes in our Master's program admissions criteria.

Methods: We evaluated the possible predictors for success in the BMG course using final grades data from the last 3 graduating classes and compared them with the student's performance in their undergraduate Organic Chemistry I (OCI), Organic Chemistry II (OCII), and Biochemistry courses. Our incoming student pool came from various universities and colleges. All the incoming students were required to have taken OCI along with either OCII or Biochemistry at their undergraduate level. The BMG curriculum and teaching materials were fixed across the period of investigation. The independent variables in this study were the undergraduate course grades while the dependent variable was the BMG course grade.

Results: A total of 114 students were admitted to the Master's classes between 2021-2023 and they all took the BMG course in their first semester. All 114 took the OCI, while 106 took OCII, and 96 took the Biochemistry courses at their respective undergraduate institutions. We performed the simple linear regression and Fisher's exact tests to analyze for statistical correlation and significance between undergraduate and graduate performance. We did not observe any significant correlation between success in BMG versus undergraduate study of OCI and/or with OCII. However, a prior Biochemistry course exhibited a significant non-zero slope (Slope = 0.2811, p value = 0.008). On the basis of this preliminary analysis, we observed that if a student's undergraduate record included a Biochemistry course, they performed better at the rigorous upper-level BMG course.

Potential Impact: Our data suggests that students' prior exposure to the relevant subject helps them to perform better in our post-graduate courses. We may use this information to assist our admissions process. Differences in undergraduate institutions, curriculum, and rigor have to be investigated.

References:

- 1) Aston-Mourney K, McLeod J, Rivera LR, McNeill BA, Baldi DL. Prior degree and academic performance in medical school: evidence for prioritising health students and moving away from a bio-medical science-focused entry stream. *BMC Med Educ.* 2022 Oct 4;22(1):700. doi: 10.1186/s12909-022-03768-y.
- 2) Almarabeh A, Shehata MH, Ismaeel A, Atwa H, Jaradat A. Predictive validity of admission criteria in predicting academic performance of medical students: A retrospective cohort study. *Front Med (Lausanne).* 2022;9:971926. doi: 10.3389/fmed.2022.971926.

3) Walters T, Abeyta A, Bean AJ, Wilson MA. The impact of holistic review on correlations between doctoral student outcomes, and GPA and GRE scores in the biomedical sciences. PLoS One. 2022;17(12):e0279258. doi: 10.1371/journal.pone.0279258.

Integrating Lectures and Academic Success Strategies

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Idea: Faculty collaborated with academic support staff to integrate academic success strategies with curricular instruction.

Need: First-year medical students often struggle with understanding what is expected of them in their transition from undergraduate or Master's programs to medical school. As a result, they are often underprepared for the rigors that lay ahead. One of the primary tasks of academic support staff, such as Learning Specialists, is to help first-year students gain an awareness of how to approach content by incorporating effective learning strategies into their study routines. While this type of support is pivotal in increasing students' rates of success, the instruction offered by the learning specialist occurs primarily outside of students' structured class time. As such, not all students benefit from the use of these services, as it is their responsibility to seek this type of support. Moreover, even when students do seek support, they might have difficulty fully grasping how to most effectively apply strategies discussed in meetings with academic support staff. With this in mind, faculty and learning specialists at our institution collaborated to provide students with academic skills support alongside the delivery of lecture material.

Methods: The main goal of this project was to provide students with simultaneous classroom instruction and learning skills support. Further, we wanted students to recognize that their approach to learning is equally important to what they are learning. To achieve this goal, learning specialists providing instruction related to academic strategies and faculty teaching lecture material alternated times in Foundations 1, the first course of medical school. Learning Specialists used specific examples of what students were taught to model strategies. For instance, while modeling various ways to effectively annotate notes, learning specialists utilized the slides faculty were reviewing with students moments prior. Learning specialists spent a total of 3 hours providing academic skills support in the classroom, over the course of several days. Students were shown how to prepare for class utilizing a variety of methods. Additionally, learning specialists provided instruction related to staying engaged in class and effective strategies to review content after class. Students had numerous opportunities to interact with both learning specialists and faculty during the academic skills portion of the lecture. Students were asked to reflect on the study strategies they used and the ways in which they differed from the strategies and techniques shown in lecture. Each student completed a post-survey two weeks after the sessions on academic skills.

Evaluation Plan: We plan to evaluate the program by reviewing and analyzing pre-and post-survey data we collected prior to the beginning of students' first class and one month after they began classes, respectively. Students were asked questions about their expectations of the differences in their study routines prior to medical school and after beginning classes. They were additionally asked to reflect on how their studying strategies changed after the integrated lecture on academic skills. The questions were centered on their use of effective learning strategies at each stage of the learning process, from their preparation before class to how they take notes during class and how they approach the content after attending lecture. We hope to see a difference in students' use of less effective strategies such as rereading and rewatching lectures, and an increase in evidence-based learning strategies, such as retrieval practice and spaced repetition (Brown et al., 2014).

Potential Impact: Academic counseling for medical students is an important factor in improving their performance and developing lifelong learning habits (Reynolds, 2019). However, it is critical that this instruction expands beyond individual sessions with learning specialists. We are advocating for the integration of academic support and curricular instruction.

References:

- 1) Brown, P. C., Roediger III, H. L., & McDaniel, M. A. (2014). *Make it stick: The science of successful learning*. Harvard University Press.
- 2) Adrian K. Reynolds (2020) Academic coaching for learners in medical education: Twelve tips for the learning specialist, *Medical Teacher*, 42:6, 616-621, DOI: 10.1080/0142159X.2019.1607271

Who Isn't Sweating Step 1? a Student Led After Action Review of School Provided Step 1 Resources

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Problem Statement: A student-centered examination of school-provided resources for Step 1 preparation is important to continue supporting student exam success.

Rationale: Preparation time, including the dedicated period, for Step 1 can be stressful for students. Even with the recent move to pass/fail grading, students' emotional, physical, and mental well-being suffer (1). Many medical schools, including the University of Pittsburgh, recognize the increased need for student support during Step 1 preparation and provide resources for academic success, emotional well-being, and decision support. The University of Pittsburgh School of Medicine's Academic Success Team (AST) has implemented many resources aimed at student success on high stakes exams (2). It is important to gather student-directed and student-centered feedback so changes can be implemented to better serve both the students and the faculty and staff involved in this process.

Methods: The target population of this study was University of Pittsburgh School of Medicine students who completed Step 1 in the spring and summer of 2023. First, a five-minute survey asked students to evaluate the school-provided resources and indicate which were most valuable to them in terms of both successful test completion and emotional well-being. There was also a section for narrative feedback. The survey was approved by the University Research on Medical Students (ROMS) committee. It was distributed in two rounds based on exam date. Additionally, twelve randomly chosen students, who tested before May 1, 2023, were invited to an After-Action Review (AAR). This AAR was a guided discussion focused on contextualizing student opinion related to the resources provided by the school. For one hour, students discussed "the four questions," with a focus on the resources and support provided for successful Step 1 completion. The four questions of the AAR framework include: what was supposed to happen (expectation), what actually happened (perception), what worked and why (sustainment), and what can be improved and how (change) (3). To encourage meaningful feedback, student names remained anonymous. The AAR was conducted by one student facilitator and attended by one staff member who was not involved in the Academic Success Team. A final summary of the survey and AAR findings, along with student recommendations, was transcribed and transmitted to the Academic Success Team.

Results: Survey data were collected from 76 participants who took Step 1 in the spring and summer of 2023. Students valued the outside resources provided, UWorld and CBSSA vouchers, as students almost unanimously selected these as top resources for success. Faculty coaches were also found to be crucial to both success and well-being for students. Additionally, support and communication with the Academic Success Team and advisory deans was highly valuable for student emotional well-being. Use of the AAR framework provided more nuance by expanding on why interventions did or did not work and identified opportunities for further improvement. While the survey identified the most important resources for students studying for Step 1, the AAR provided time and space for students to discuss and suggest specific best practices likely to result in greater student success and a sense of support during their Step 1 study period.

Potential Impact: The AAR framework, placed in the hands of medical students, proved to be a powerful tool for collecting and collating actionable feedback to the school. Use of this intervention has led to meaningful change at PittMed and could perform similarly in other institutions.

References:

- 1) Sathe NC, Carney PA, Furnari M. Nourish: A pilot program to support self-Efficacy, learning, and wellness during USMLE step 1 preparation. *Med Educ Online*. 2023;28(1):2153781.

- 2) Diem C, Hairrell A. Charting a successful course: The academic and clinical success committee's impact on student success. *Educ Health (Abingdon)*. 2019;32(2):84-6.
- 3) Salem-Schatz, S., Ordin, D., & Mittman, B. (2010, October). *Guide to the After Action Review. Using Evaluation to Improve Our Work: A Resource Guide.*

Advising Tools: Assessing and Building Optimistic Belief Systems for Increased Academic Performance

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Nova Southeastern University Dr. Kiran C. Patel College of Allopathic Medicine (NSU MD)

Idea: Application of self-assessment and learning sessions to identify at-risk students, develop targeted advising, and increase USMLE exam performance.

Need: The relationship between student learning/study strategies and academic performance has been investigated in numerous studies and significant associations have been observed, including performance on the United States Medical Licensing Examination (USMLE) Step 1 exam (1, 2, and 3). While many of these studies utilize the Learning and Study Strategies Inventory (LASSI) to assess subscale factors, an analysis specific to student beliefs and behavior can provide additional data and contribute to a more individualized approach when identifying at-risk students and determining effective advising strategies. The Life101 self-assessment is a new tool, created by the H&H Publishing Company, aimed specifically at the assessment of beliefs, attitudes, and motivations. Life101 employs nine subscales that assess the relationships between beliefs and outcomes. The correlation of this data specific to academic success in medical school has not been thoroughly evaluated and can provide a unique opportunity for the development of tailored and behavior-specific advising tools for increasing student performance during USMLE Step 1 and 2 exams, as well as academic performance through medical school.

Methods: As part of the Nova Southeastern University Dr. Kiran C Patel College of Allopathic Medicine MD Program, the Life101 self-assessment inventory was administered to 51 first year medical students from a single class (graduating in 2026) at the conclusion of their first semester. At various points during the students' first year, 3 separate learning sessions were conducted specific to Life101 results and strategies. Learning sessions included action plans for strategy implementation, student reflections, setting SMART goals, discussions on strategies being utilized, case studies, and surveys. Immediately following the third learning session, the Life101 self-assessment was administered to the students for a second time. Results were analyzed for significant changes between the first and second self-assessments. During the students' second and third years in medical school, they will complete the USMLE Step 1 and Step 2 exams. Results from the exams will be analyzed for associations to results from the Life101 self-assessments.

Evaluation Plan: Life101 self-assessments were administered in conjunction with learning sessions designed to establish and promote strategies for improving lower scoring subscales. Evaluation of learning session impact on belief systems was conducted following administration of the second Life101 self-assessment. Results from the initial and secondary Life101 self-assessments were statistically analyzed using paired T-tests; no significant differences were observed. Evaluation of student academic performance will be based on results from the USMLE Step 1 and Step 2 exams. An analysis will be conducted to measure the strength of association between USMLE Step 1 and 2 exam performance and the Life101 subscales. Results will be utilized to develop new advising tools, including a data-driven identification system for at-risk students and individualized strategies to increase academic performance.

Potential Impact: Belief systems may function as strong influential factors on student success and potential indicators of academic performance in medical school. The implementation of a program utilizing the Life101 self-assessment can serve as a more comprehensive approach to advising MD students and increasing overall academic success.

References:

- 1) Carson AD. Predicting Student Success from the Lassi for Learning Online (LLO). *Journal of Educational Computing Research*. 2011; 45(4), 399–414. <https://doi.org/10.2190/EC.45.4.b>.

- 2) Cook G, Sachs A, Wortham C. Learning and Study Strategies Inventory in the context of STEP 1 performance [version 1]. *MedEdPublish* 2021, 10:83. <https://doi.org/10.15694/mep.2021.000083.1>.
- 3) Khalil MK, Williams SE, Hawkins HG. The Use of Learning and Study Strategies Inventory (LASSI) to Investigate Differences Between Low vs High Academically Performing Medical Students. *Med Sci Educ*. 2020 Mar; 30(1): 287–292. Published online 2019 Dec 19. doi: 10.1007/s40670-019-00897-w
PMCID: PMC8368407 PMID: 34457669.

Summer Zoom Series: A New Direction

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Problem Statement: Medical students feel pressure to obtain academic and extracurricular opportunities in light of Step 1 becoming pass/fail and the COVID-19 pandemic.

Rationale: In 2022, the United States Medical Licensing Examination Step 1 exam transitioned from scored to pass/fail, aiming to decrease medical student (MS) exam stress and making the residency application process more holistic (1). The switch is expected to put an emphasis on other parts of a residency applicant's application, such as research and honors status (1,2). As a result, MS have vocalized feeling increased pressure to succeed in other academic and extracurricular endeavors to be competitive residency applicants (2). Additionally, the COVID-19 pandemic disrupted MS opportunities for research, mentorship, and clinical exposure (3).

In response, we co-opted the Summer Zoom Series (SZS), a program designed to provide students with advice and opportunities during the COVID pandemic. We organized a didactic series that included specialty talks, how to get involved in research, volunteerism, and mentorship, and more to help prepare incoming MS for medical school and residency.

Methods: Faculty polled students to determine what topics to host for the inaugural SZS in 2020. In response, faculty organized one-hour Zoom didactic sessions on different specialties in medicine and clinical topics such as electrocardiogram readings, common labs, LGBTQ+ care, and Anti-Racism. "Hands-on" sessions were also included, where students can practice suturing and intravenous line (IV) placement at home using practice materials that were distributed individually to students.

SZS continued in the summer of 2021 and 2022, with new additions to the curricula, such as "So You Wanna be a First Year (SYWBAFY)" and "So You Wanna be a Second Year (SYWBASY)," where upperclassmen give advice to their underclassmen. In-person workshops were also held in 2021 and 2022, such as suturing, IV placement, and ultrasound sessions.

In 2023, due to the high-demand in previous years, additional in-person workshops were added, and an in-person SYWBAFY session was held, which involved a "Question and Answer" panel of current second-year medical students for incoming first-year medical students (MS1s).

Attendance was tracked in all sessions. When applicable, Zoom sessions were recorded and uploaded to the learning management system for students to view. The number of views per video was also recorded. At the end of summer 2023, an optional survey was sent out to participating students to collect their feedback regarding SZS.

Results: In 2020 SZS, 36 Zoom sessions were held with an average of 14.25 MS in attendance per session. Sessions consisted of incoming MS1s and current medical students. Recordings were viewed 245 times by 104 unique viewers. In 2021, attendance decreased to an average of 9 MS per session (31 total sessions), but views increased to 407 views and 119 viewers. In 2022, average attendance decreased to 7.4 MS per session (57 total sessions), but views increased to 666 and viewers to 138.

In 2023, 47 total sessions were held (38 Zoom-based and 9 in-person skills sessions). Sessions were primarily attended by incoming MS1s. Average attendances were highest for the following: SYWBAFY (32.6), in-person workshops (15), Curriculum Vitae workshop (13), and extracurriculars (6.8). Recordings were viewed 296 times by 112 viewers.

Data from the post-series survey (n=37) found 78.6% of MS (n=28) strongly agreed that SZS presented information pertinent to their future careers, 83.3% (n=30) strongly agreed that it was informative, 90% (n=30) strongly agreed that they enjoyed at least one session, and 79.3% (n=29) strongly agreed that SZS answered a question that they had about school or medicine. MS gave overwhelmingly positive feedback and recommended that future SZS be held in the evenings so that more students could attend.

Overall, while viewership decreased from previous years, most MS found utility in SZS; and both verbal and written feedback from MS and presenters was appreciative.

Potential Impact: SZS provides MS a glimpse of specialties in medicine and MS involvement. Although attendance in specialty talks decreased, SYWBAFY attendance and the demand for in-person workshops remains high. Going forward, we plan to host evening sessions, additional in-person workshops, and panels instead of individual sessions for the specialties.

References:

- 1) Ozair A, Bhat V, Detchou DKE. The US Residency Selection Process After the United States Medical Licensing Examination Step 1 Pass/Fail Change: Overview for Applicants and Educators. *JMIR Med Educ.* 2023;9:e37069. Published 2023 Jan 6. doi:10.2196/37069
- 2) Mott NM, Kercheval JB, Daniel M. Exploring Students' Perspectives on Well-Being and the Change of United States Medical Licensing Examination Step 1 to Pass/Fail. *Teach Learn Med.* 2021;33(4):355-365. doi:10.1080/10401334.2021.1899929
- 3) Papapanou M, Routsis E, Tsamakis K, et al. Medical education challenges and innovations during COVID-19 pandemic. *Postgraduate Medical Journal* 2022;98:321-327.

The Effectiveness of a Student Run Free Clinic as a Learning Tool for Undergraduate Students

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Idea: Assessing how student run free clinics can prepare undergraduates for future health profession roles.

Need: Applying to medical schools and other health profession schools is a competitive process. Students must display characteristics important for a health profession role, such as communication skills and teamwork, and they are required to have experience working or volunteering in a healthcare setting (1). Some undergraduates choose to volunteer at student-run free clinics for a hands-on experience with medicine. Cass Clinic is one such clinic that allows students to work as part of the care team. Understanding how Cass and other student-run free clinics plays a role in the education of pre-health students, in influencing their perspectives of medicine, and in enhancing their preparation for future healthcare roles can help improve the effectiveness of the integration of undergraduate students into free clinics. We will examine the following objectives: the influence of Cass on students' intention to pursue a role in healthcare, the impact of Cass on preparing students for future healthcare roles according to the AAMC Interpersonal Competencies, what students have learned from their experience volunteering at Cass, and how Cass Clinic can improve the educational experience for pre-health students (2).

Methods: To assess the impact of Cass on undergraduate students' learning experience, students from the university associated with the medical school where Cass is located are recruited to the clinic through a sign-up list sent through email every week. One to two undergraduate students are placed into a care team comprised of one M2 student and one M3 or M4 student. During a 3-hour clinic session, each care team sees at least one patient where the undergraduate student observes history taking, a physical exam, medical student discussions regarding the patient and treatment plans with the attending, and a final closing encounter with the patient. When care teams are not seeing patients, undergraduates have the opportunity to ask the medical students questions or learn simple procedures such as taking blood pressure. Undergraduates were recruited and incorporated into care teams in this format for one year.

Evaluation Plan: The objectives are assessed through an emailed survey to all undergraduate students who have volunteered with Cass Clinic from 2022-2023. The quantitative portion of the survey uses multiple choice questions, assessed using a Likert scale, to examine the likelihood of pursuing a role in healthcare before and after volunteering at Cass, how well students developed their Interpersonal Competencies (communication skills, teamwork skills, cultural competency), how much students have learned about working with a medically underserved population, how comfortable students feel working with a medically underserved population in the future, and how much students have learned about healthcare in Detroit. The qualitative portion of the survey contains open-ended, free response questions such as how students' perspectives of medicine or healthcare have been influenced by Cass, what students have learned the most, how well Cass helped students achieve their learning goals, and how Cass can improve students' learning experiences.

Potential Impact: To date, there have not been studies examining the impact of a student-run free clinic as a learning tool for undergraduates. This study will reveal new insights into how to better design clinics to provide students with a better learning experience, and how it can be used to assist students in pursuing future healthcare roles.

References:

- 1) How to Get into Medical School. www.aafp.org. Accessed September 20, 2023.
<https://www.aafp.org/students-residents/medical-students/considering-medical-school/getting-into-medical-school.html#participate>

2) The Core Competencies for Entering Medical Students. Accessed September 20, 2023. Students & Residents. <https://students-residents.aamc.org/applying-medical-school/article/core-competencies>

Success Predictors in the Preclinical Medical Education

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Idea: We believe that certain success predictors exist that can help us to refine the criteria for admission to the preclinical sciences master's programs.

Need: The primary goal of our Master of Sciences in Preclinical Sciences (MSPCS) program is to prepare students for the rigors of the medical school and provide solid scientific background for their graduate medical education. When admitting students into our program we are looking at several parameters that help us to choose between different candidates [1]. These parameters are the undergraduate GPA, MCAT or GRE score, as well as the performance in prerequisite courses. After evaluating these criteria, we look at additional attributes, such as the level of courses taken, recommendation letters, etc.

Although when accepting the students their initial presumed potential is mostly equal in the admitted cohort, sometimes it is hard to explain why one student struggles in the program while another student succeeds.

We hypothesized, that if we will analyze and compare factors that were considered as success predictors initially with the actual performance in the program, this will help us to refine our admissions criteria. Otherwise, if no statistically significant connection exists between the current admissions criteria and success in the program, we are open to evaluate other criteria that may be influencing the students' performance.

Methods: In order to analyze the interdependence between current admissions criteria and success in the program, we examined the students' performance in the Human Development course in our MSPCS program. This course is taught in the Spring semester and is taken by the student who were already successful in the Fall semester and qualified to continue their education in the program. The Human Development course integrates the concepts of Embryology, Developmental Anatomy, Genetics, and Pathology [2]. This course was rated by the students as the most rigorous and demanding a lot of work and dedication.

This prompted us to analyze the connection between the initial admissions criteria and success in this particular course, to start with, while potentially looking at the other courses in the future. We have looked at the interdependence between student's performance in this course and undergraduate GPA, MCAT or GRE, and science versus non-science undergraduate degree. We also hypothesized that an undergraduate Anatomy course may influence success in the Human Development course, as our Human Development course includes some anatomical concepts and anatomic terminology [3].

Evaluation Plan: Currently we have analyzed the interdependence between the MCAT and GRE score and success in the Human Development course with linear regression. It appears that these qualitative parameters can be used as valid predictors for the success in the course (Std Beta 0.215, Estimate 2.702, Std. Error 1.223, t Ratio 2.210, $p=0.030$). The same applies to the undergraduate GPA, which also serves as a valid predictor for the success in the Human Development course (Std Beta 0.233, Estimate 4.551, Std. Error 1.901, t Ratio 2.394, $p=0.019$).

Interestingly, we have identified that there is no connection between the science versus non-science undergraduate degree and success in our Human Development course, which means that we should not judge our applicants based on the type of the program they have attended prior to applying for the preclinical sciences education. We have also found that taking the undergraduate Anatomy course is not predictive of the success in the Human Development course and should not be taken into consideration as one of the admissions criteria.

This is a work-in-progress with preliminary data and we are planning to look at the other factors that can potentially influence students' success in our MSPSC program.

Potential Impact: It is expected that if clear information about the connections between the admission criteria and the eventual success in the MSPCS program is available, this will help us and other programs to refine the admissions criteria, and may potentially broaden and diversify the admitted student cohorts.

References:

- 1) Ferguson E, James D., Madeley L. Factors associated with success in medical school: systematic review of the literature. *BMJ* 2002; 324: 952-957.
- 2) Carlson BM. Embryology in the medical curriculum. *The Anatomical Record (New Anat.)* 2002; 268: 89-98.
- 3) Mitchel R, Batty L. Undergraduate perspectives on the teaching and learning of anatomy. *ANZJSurg* 2009; 79: 118-121.

Enhancing Medical Student Radiology Education: Effective Strategies for Engagement and Participation

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Problem Statement: Implementing a model designed to increase medical student exposure, promote interest, and improve overall satisfaction with radiology.

Rationale: Radiology electives offer a unique opportunity for medical students to gain exposure to diagnostic imaging and its integral role in healthcare. However, these electives often face challenges related to student engagement, as the passive nature of traditional radiology education can hinder interest and satisfaction. It has been demonstrated that dedicated radiology learning and early exposure has a long-lasting effect on medical students' attitudes towards radiology (1). Various methods have been introduced to increase participation such as the gamification of image interpretation (2). We propose an additional approach that uses an online educational model to allow for active participation and learning to supplement radiology electives.

Methods: The online model, Raducation, is a comprehensive platform that provides third- and fourth-year medical students with a flipped-classroom curriculum that transforms the radiology elective into a more dynamic learning experience. The model includes introductory material to body imaging, case-based simulations that are designed to encourage critical thinking and dictation practice, and pre- and post-rotation surveys. The data collected from the pre- and post-rotation surveys address multiple aspects of the rotation such as confidence in diagnosing and interpreting computed tomography (CT) and ultrasound (US) abdominal imaging, feelings towards radiology as a career choice, and overall satisfaction with the rotation.

Results: From 2022 to 2023, 36 and 17 medical students completed surveys for the CT and US body imaging electives, respectively. Demographics included 17% third year and 83% fourth year students in CT body imaging, and 35% third year and 65% fourth year students in US. For CT and US students, there was a statistically significant improvement in confidence of identifying normal anatomy (CT: $t=-8.9$, US: $t=-3.4$, $p<0.05$), common pathology (CT: $t=-7.9$, US: $t=-3.4$, $p<0.05$), knowledge of basic CT/US concepts (CT: $t=-7.2$, US: $t=-4.2$, $p<0.05$), and interpreting a CT abdomen/pelvis or US report (CT: $t=-5.8$, US: $t=-6.7$, $p<0.05$). The courses, however, did not increase students' decision to choose radiology as a career (CT: $t=-1.5$, $p=0.14$, US: $t=-1.2$, $p=0.26$). With CT and US, 70% vs. 35% of students were extremely satisfied, 8% vs 24% were moderately satisfied, and 22% vs 41% were quite satisfied with the courses.

Potential Impact: Preliminary results indicate an increase in medical student confidence and satisfaction with the body imaging radiology elective. This unique approach sets a precedent for reimaging radiology education as the model may have a greater impact on career decisions if incorporated earlier into the medical student curriculum.

References:

- 1) Branstetter BF 4th, Humphrey AL, Schumann JB. The long-term impact of preclinical education on medical students' opinions about radiology. *Acad Radiol.* 2008;15(10):1331-1339. doi:10.1016/j.acra.2008.03.015
- 2) outhillier M, Canil A, Cheng BYC, Lebel K, Dobson JL. Inaugural Pan-Canadian RADGames: Results From a Successful Approach to Radiology Education for Medical Students. *Acad Radiol.* 2023;30(1):113-121. doi:10.1016/j.acra.2022.07.005

Presenters' Bios

Abdelwahab, Muhab

Muhab Abdelwahab is a second-year medical student at the University of Minnesota medical school raised in Minneapolis. His clinical interests include diversity in medicine, promoting engagement between providers and the communities they serve, and social determinants of health. His academic background is in Biology, Society, and Business Management. He serves as the diversity, equity, and inclusion student chair at the University of Minnesota Medical School and is very active with many medical student groups. Muhab's current research projects and interests are in removing barriers to minority healthcare, providing more robust physician cultural competency, and improving community health literacy. He currently works with several non-profit organizations and community groups and hopes to continue learning from his communities. abdel226@umn.edu

Adam, Marla

Marla Adam attended the University of Michigan - Ann Arbor from 2017-2021. While there, she majored in Biomolecular Science and minored in Middle East Studies. Marla is a second-year medical student attending Wayne State University School of Medicine (WSUSOM). At WSUSOM, she is a part of the Admissions Committee and Promotions Committee, and she is also a Warrior MD Ambassador, a Peer Mentor, and a Lead Clinical Skills Near-Peer Learning Coach. hk8150@wayne.edu

Adams, Ashley

As a medical student at Duke University School of Medicine, Dr. Ashley Adams became interested in integrating robust opportunities into formal medical education for medical students to reflect on their process of becoming physicians. In my fourth year of medical school, Dr. Adams helped develop a workshop for clerkship-year medical students about how they may experience guilt, shame, and shame resilience in their early exposures to clinical medicine. Her team published the results from this workshop in Academic Medicine, and Dr. Adams subsequently discussed this work on the Academic Medicine podcast. Following medical school, she began my residency and fellowship training in the Triple Board combined pediatrics/adult psychiatry/child and adolescent psychiatry program at Brown University. During her residency and fellowship, Dr. Adams developed and implemented a pilot course for clerkship year students at the Alpert Medical School of Brown University focusing on Professional Identity Formation. Her participation in the Harvard Macy Post-Graduate Program for Future Academic-Clinician Educators allowed her to workshop and develop this pilot course. She hopes to continue to integrate her interest in integrating professional identity formation into undergraduate medical education throughout her career. avadams28@gmail.com

Addams, Joel

Dr. Joel Addams' interests in medicine have always centered around blood and transfusion medicine, which he identified early as an internal medicine intern at the University of Utah. After a residency in pathology, his fellowship at the excellent hospitals in the Seattle area and at the blood collection organizing Bloodworks Northwest continued to hone his interests in blood management, massive transfusion, and coagulation. At the University of Arizona, believing that patient outcomes would be improved through the residents and fellows, he formed the Transfusion Committee to create a sense of comradery, an environment of learning, and confidence in the minimally taught transfusion medicine. joel.addams@bannerhealth.com

Adewuya, Ruth

Dr. Adewuya is a physician, leader, and educator in post-graduate medical education. She is the Managing Director of the Stanford Center for Continuing Medical Education, where she leads the strategic planning and delivery of professional development courses, workshops, and initiatives. The office is responsible for continuing education activities for physicians and other health care providers at Stanford Medicine, composed of the Stanford School of Medicine, Stanford Health Care, and the Lucile Packard Children's Hospital Stanford. She works with Stanford faculty, students, staff, and external collaborators to build educational programs that reach learners worldwide. She is also the

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Aguerre Lopez, Ines

Ines Aguerre Lopez is a third-year Medical Student at the Renaissance School of Medicine at Stony Brook University in New York. She earned her bachelor's degree in Neuroscience and Sociology from Tulane University in New Orleans. In her undergraduate years, she was involved in research regarding the effects of estrogen on cardiovascular health in postmenopausal women. She also worked for three months in Peru on public health projects, including assessing access to disability services and capturing knowledge and perception of the Zika Virus. After receiving her undergraduate degree, Ines spent two years working as a clinic research coordinator at the Multiple Sclerosis Center at Columbia University Medical Center in New York City. There, she worked on numerous industry-sponsored clinical trials and investigator-initiated studies researching Multiple Sclerosis and other neuroinflammatory disorders. Since beginning medical school, Ines has become involved in various initiatives promoting equitable health opportunities for patients of diverse backgrounds. A current area of interest is developing a module, alongside other medical students from diverse backgrounds, to demonstrate the proper utilization of medical interpreters and emphasize their utility and importance in achieving optimal health outcomes. ines.aguerrellopez@stonybrookmedicine.edu

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Akeh, Nay

Nay Akeh is a third-year pharmacy student at the USC Mann School of Pharmacy and Pharmaceutical Sciences. Nay earned an associate degree at Citrus Community College and continued her academic journey at the University of California, Riverside, where she obtained her bachelor's degree. Nay works as a pharmacist intern at 986 Pharmacy in La Verne, California. Nay has a strong interest in research, demonstrated by her participation in the USC Dean's Summer Research Fellowship. During this program, she conducted research on omeprazole pharmacokinetics using the GastroPlus software program. She was a course assistant in the International Student Summer Program (ISSP) hosted by the USC Mann School of Pharmacy and Pharmaceutical Sciences. Nay aspires to own a successful pharmacy in the future. To achieve this goal, she is diligently working on gaining valuable experience within the field of pharmacy. akeh@usc.edu

Almalahi, Ateik

Ateik Almalahi is a second-year medical student at Indiana University School of Medicine. Before beginning medical school, he obtained a Bachelor of Science in biochemistry with a minor in psychology from Purdue University Fort Wayne. During his undergraduate years, he spent his free time volunteering at local organizations, performing chemical research with his advisor, and enjoying time with family and friends. One of the most impactful organizations he volunteered at was Matthew 25, a clinic designed to help serve those who cannot afford proper healthcare. While at this organization, he solidified his passion for medicine and understood the importance of ensuring everyone receives proper health care. It is shocking to him how much of an impact one clinic can have on an entire community. Now, as a medical student, he strives to excel in his classes in hopes of being able to serve his community in the near future. aalmala@iu.edu

Anderson, Blaire

As a fourth-year medical student at Dartmouth's Geisel School of Medicine, Blaire Anderson has demonstrated her commitment to research, health equity, and medical education within the field of dermatology. In 2018, Blaire graduated with Distinguished Honors from the Honors College at Boise State University, earning a BS in Biology with an emphasis in Microbiology. While in medical school, Blaire was President of the Pathology, Radiology, and Dermatology Interest Groups. After her second year of medical school, Blaire completed the I William Grossman Student Fellowship in Pathology. During this fellowship, Blaire led several research projects within various subspecialties, including

breast and gastrointestinal pathology, hematopathology, and dermatopathology. She has been invited as a speaker to several national conferences, including Experimental Biology 2022, the American Society of Investigational Pathology 2022, and the Association of Molecular Pathology 2022. She is a co-creator and facilitator of the preclinical elective Dermatology: Ethics and Health Equity, which invited students to explore inequities and historical injustices in the field of dermatology and challenged them to think critically about opportunities to enhance cultural competence and equitable care in research and clinical dermatology. Blaire intends to pursue a career in dermatology. blaire.anderson.med@dartmouth.edu

Andon, Anabelle

I am a Medical Education and Learning Specialist at Columbia University's Vagelos College of Physicians and Surgeons (VP&S) and the International Editor of the journal Teaching and Learning in Medicine. In my main role at VP&S I advance and facilitate educational programs, counseling services, and learning resources that promote academic success; provide consulting services for students with specific emphasis on learning, study, and test-taking strategies; and support educator development coaching including: assisting instructors in curriculum development, writing effective learning objectives, developing and utilizing useful, reliable and valid teaching and assessment tools, and analyzing and reporting results that provide evidence of learning. I currently serve on multiple roles related to Diversity, Equity, and Inclusion including service roles in the Anti-Racism for Medical Education Coalition and the Office of Medical Education Anti-Racism Taskforce, as well as in a researcher and designer capacity in a Provost-funded Upstander Skills project. Previously, I worked as Clinical Faculty and the Director of the Learning Resource Center at the City University of New York School of Medicine and as a Learning Scientist at the Florida International University College of Medicine. In both roles, I developed empirically supported programs to support the academic success of medical students and participated in early identification of students with academic difficulty, evaluated their academic progress, and developed strategies for improvement appropriate to their learning needs. Internationally, I have also worked on several projects which have focused on the decolonization of medical education and publishing, and the provision of a quality education to disadvantaged populations such as immigrants, migrants, and indigenous students both in the United States as well as in Latin American countries. As a Foreign Language Area Studies Fellow (FLAS) in 2009, I traveled to the Ecuadorian Amazon where I conducted qualitative research on the education provided to indigenous children. I hold a certificate in measurement and statistics, a certificate in project management, and certificates from the National Center for Education Statistics on conducting research utilizing large scale assessments. A native of Mexico, I am bilingual in English and Spanish and have studied Italian and Kichwa. aa5139@cumc.columbia.edu

Arafat, Fajr

Fajr Arafat is a third-year medical student at King Salman International University, Faculty of Medicine, South Sinai, Egypt. She is a pioneer in creating scientific memes. Her created memes were displayed by her instructors in several international conference presentations and workshops as examples for students creation. These conferences include the KSIU International Virtual Medical Education Conference 2022, IME2022, and AMEE 2023. She is an interactive student, participated in many educational events and received many Certificates of Honor for her contributions and outstanding performance. fagr221100135@ksiu.edu.eg

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Dr. Shi Armero is an Obstetrician-Gynecologist and a Diplomate of both the International Board and the Philippine College of Lifestyle Medicine. During her career since 2014, as a prolife doctor, she founded the Our Lady of Guadalupe Natural Family Planning Center-Philippines advocating, teaching and training couples on how to space or achieve pregnancy, the natural way. This was in collaboration with the Philippine Federation of Natural Family Planning, a government agency in the country. In 2018, she joined the academy as the Assistant Dean in one of the Schools of Medicine in Cebu City, Philippines and a Faculty Reviewer of the Physicians Licensure Examination. Dr. Armero

gives talks to medical institutions, religious organizations, companies and universities on various topics on obstetrics and gynecologic issues and other concerns. She conducts regular and free online health talk on her Facebook page: Dr. Shi Armero OB GYN Lifestyle CLINIC and YouTube channel Doc Shi TV as community extension strategies to reach out to more women needing guidance in their health. With her active community program, she was awarded in the 2022 Golden Globe Annual awards for Business excellence and Outstanding Filipino Achiever. She is ongoing with her Master of Academic Medicine degree at USC. mjarmero.swu@phinmaed.com

Aston, Heath

Heath Aston is a third-year medical student at the Medical College of Georgia from Marietta, GA. He attended the University of Georgia, majoring in Cellular Biology with a minor in Public Health. In medical school, Heath has participated in free clinics and a medical mission trip to the Dominican Republic. He is pursuing a career in pediatrics. haston@augusta.edu

Awadallah, Nida

Dr. Nida Awadallah is an Associate Professor in the Department of Family Medicine at the University of Colorado School of Medicine. She works with the University of Colorado College of Nursing healthcare centers as a physician consultant and primary care physician; her medical practice centers on integrated healthcare and treating underserved populations. At the CUSOM, she works as a faculty specialist for clinical remediation of medical students, residents, and fellows. She helps learners from all backgrounds maximize their potential in their medical careers. Previously, Dr. Awadallah was the Associate Program Director and Director of Education at the CU Rose Family Medicine Residency Program. She received the CU Department of Family Medicine Teacher of the Year Award in 2017. Dr. Awadallah graduated from the CU Rose Family Medicine Residency Program and Northeast Ohio Medical University. nida.awadallah@cuanschutz.edu

Awadzi, Rossby

Dr Rossby Awadzi is the visionary founder of GetMedical, a multifaceted teaching platform committed to delivering impactful education to students. GetMedical boasts a diverse team of dedicated professionals who employ innovative and memorable teaching methods. The platform has garnered recognition from esteemed institutions, including NHS England, and earned the prestigious NHS Entrepreneurship Award. Rossby is steadfast in his mission to establish a brand that simplifies complex medical subjects for lay individuals, empowering them to comprehend their health and become informed advocates. He envisions a future career in general practice, aiming to make a difference in healthcare accessibility and patient empowerment. rossbyawadzi@gmail.com

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Dr. Ayvazyan is a highly accomplished and board-certified Internal Medicine physician with over 15 years of experience in the field. He currently serves as USC's Director of College Health Medical Student rotation. In their current role, he plays a pivotal role in overseeing and coordinating the clinical training of medical students, curriculum development, and ensuring the quality of the clinical rotation. Dr. Ayvazyan has demonstrated steadfast dedication to student health and wellness, focusing on promoting preventive care, mental health awareness, and overall wellbeing among college students. vladimir.ayvazyan@med.usc.edu

Azher Anwer, Amal

Dr Amal Azher Anwer is an aspiring plastic surgeon deeply committed to improving my teaching skills, which he considers a cornerstone of advancing medicine. He is proud to be part of an exceptional group of doctors who have created GetMedical, a multifaceted teaching platform encompassing online, social media, and simulation-based instruction. GetMedical offers a personalized approach that aligns seamlessly with traditional school curricula. In parallel, he is pursuing a PG Cert in Medical Education as he works toward becoming a proficient plastic surgeon. amal.a.anwer@gmail.com

Bagavathy, Kavitha

Kavitha Bagavathy is an Assistant Professor of Clinical Medicine and has been an Associate Program Director of the Pulmonary and Critical Care fellowship program at the University of Southern California

since 2021. As a clinician educator, she educates fellows, residents, and medical students during clinical rotations and didactics sessions and as a mentor on research projects. Before her appointment at USC, she was an Assistant Professor at the University of Pittsburgh for three years. At that time, she was an instructor in the regional Mechanical Ventilation courses in Pittsburgh and Washington, DC. She was also one of the instructors for the Pulmonary medicine workshops for medical students and continues to do pulmonary physiology case reviews with the medical students at USC every year. She has been the course director of the mechanical ventilation source for USC since June 2023. Kavitha Bagavathy is currently pursuing a Master's in Academic Medicine at USC. Her clinical interests are Interstitial Lung Disease, Medical Critical Care, and Mechanical Ventilation. kavitha.bagavathy@med.usc.edu

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Harsimer Bal is a third-year undergraduate student at the University of California, Los Angeles, majoring in Human Biology and Society to obtain a Bachelor of Science degree. She is a co-director of the External Relations Committee of UCLA's Medical Aid Initiative and has been a part of the organization since her freshman year. harsimerbal@gmail.com

Balachandran, Neha

Neha Balachandran is a class of 2025 student at the Medical College of Georgia. She is originally from Suwanee, Georgia. Neha has her Bachelor's in Neuroscience and Master's in Multidisciplinary Biomedical Sciences from the University of Alabama at Birmingham. She aims to be a Family Medicine physician, to help serve underserved populations and work in public health to minimize healthcare disparities. nbalachandran@augusta.edu

Banner, Jasmine

Jasmine Banner is in her third year of medical school at the University of Utah. Though born and raised in Hawaii, she is excited about all the different adventures the Utah outdoors offers and, in her free time, enjoys snowboarding, hiking, and swimming in the lakes. Her interests include medical education, mentorship, and advocacy for underserved populations. jasmine.banner@hsc.utah.edu

Barnett, Derek

Derek Barnett has been involved in research for three years at Penn State. Initially, Derek worked as a research assistant in the Social Vision and Interpersonal Perception lab for one year. Then, Derek worked as a research assistant for two years with a cancer research lab between 2016 and 2018, studying the impact of various drug cocktails on in-vitro hepatocyte reprogramming. Lately, Derek has engaged in many clinical research projects throughout his tenure at Penn State College of Medicine. In particular, Derek has focused on studying the impacts and implications of novel AI technologies in medicine. dbarnett@pennstatehealth.psu.edu

Bartrom, Samuel

Samuel Bartrom is a second-year medical student at Indiana University School of Medicine. He received a bachelor's degree in biology from Indiana University - Purdue University Indianapolis in 2022. Throughout his undergraduate career, he was involved with medical research, service learning, and physician shadowing. These experiences allowed him to understand the pivotal role continuing education and service has in advancing the medical field. Samuel is currently involved in orthopedics research, is president of the Radiology Student Interest Group, and works as a farmhand at his neighbor's horse rescue. He enjoys spending free time with his family and hopes to one day serve as a physician in the rural Indiana community he grew up in. sambart@iu.edu

Beardsley, Tom

Thomas D Beardsley is an Assistant Professor of Emergency Medicine at the University of Florida College of Medicine-Jacksonville. Following his four-year emergency medicine residency he completed a one year medical simulation fellowship. During this time Dr. Beardsley worked on a research project focused on creating just-in-time procedural training videos for medical staff. He also assisted in a project evaluating the use of the modified Angoff Method to reach expert consensus regarding the difficulty of various medical simulations. During his residency he was the site lead on a

multi-center randomized controlled study comparing simulation-based deliberate practice and mastery learning to self-guided practice. In addition to his role in the clinical setting he is the Medical Director for The Center for Simulation Education and Safety Research. This is the institution's simulation center which focuses on training house staff, fellows, medical students, advanced practice providers and nurses. Dr. Beardsley is the lead instructor for the institution's quality improvement and patient safety introductory lecture. He also created and facilitate the QIPS curriculum capstone assessment escape room. beardsley.tom30@gmail.com

Behers, Brett

Brett Behers is a third-year medical student interested in how artificial intelligence platforms can shape the world of healthcare. These platforms, ranging from chatbots such as Chat GPT to automated scribing software, could redefine the role of physicians and how they serve their patients. His concern is that practitioners who do not follow this wave of platforms could be left behind. To this end, his research focuses on how medical students can be exposed early to these platforms. Before his AI-related projects, Brett participated in various clinical research projects, from general surgery case reports to building a database on peritoneal cancers and, most recently, a meta-analysis studying the blood-pressure-lowering effects of joint supplements such as potassium and magnesium. His interest in medicine is similarly broad, as he intends to work as a general practitioner, either as a hospitalist or in primary care. brettbehers@usf.edu

Behrooz, Melika

Melika Behrooz is an aspiring Family Physician with a degree in Urban Studies and Public Health from Barnard College and four years of clinical research experience in New York City. She is now pursuing her MD at Hackensack Meridian School of Medicine in New Jersey. melika.behrooz@hmn.org

Bellinger, Jeffrey

Jeffrey Bellinger is a fourth-year medical student at the University of Virginia who is applying to Otolaryngology in the Spring of 2024. Outside of otolaryngology, he has research interests in patients with disabilities, especially intellectual disabilities. jrb6dup@virginia.edu

Benmerzouga, Imaan

Dr. Benmerzouga is a medical educator who has been teaching medical physiology for six years. She is currently the course director and teaching faculty of medical physiology in the osteopathic medicine program at the Kiran C. Patel College of Osteopathic Medicine at the Tampa Bay campus. She earned her PhD in 2013 in cell biology. Her passion lies in using educational tools and teaching modalities to enhance student learning of the basic sciences. ibenmerz@nova.edu

Bennett, Raven

Raven Bennett is a third-year medical student at Geisel School of Medicine at Dartmouth. In 2017, Raven graduated with Honors from Swarthmore College, and in 2020, she completed the premedical postbaccalaureate program at Bryn Mawr College. Raven has demonstrated a commitment to health equity through her work at Geisel as former co-president of the Urban Health Scholars, educational programming coordinator for the medical school's chapter of White Coats for Black Live, co-founding student lead of the LGBTQIA+ Good Neighbor Health Clinic, and co-creator and facilitator of the preclinical elective Dermatology: Ethics and Health Equity. She also served as the Director of Research for the Dermatology Interest Group. After her second year of medical school, Raven was awarded the S.M. Tenney Medical Student Fellowship. During her year-long research fellowship, she conducted research to characterize the skin microbiome in patients with dermatomyositis. Raven has co-authored several papers in the field of dermatology, including a study on the outcomes of efforts to diversify the dermatology curriculum in undergraduate medical education. raven.bennett.med@dartmouth.edu

Besinque, Kathleen

Kathleen (Kathy) Besinque is a Professor of Pharmacy at the Chapman University School of Pharmacy where she is the Assistant Dean for Experiential Education. After receiving her Pharm.D.

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Bethishou, Laressa

Dr. Bethishou received her Bachelor of Science degree in Biological Sciences from the University of California, Los Angeles (UCLA) and her Doctor of Pharmacy Degree from the University of Southern California School of Pharmacy (USC). She completed a pharmacy practice residency at Stanford Health Care and continued on as a Transitions of Care Pharmacist until joining Chapman University School of Pharmacy. She is faculty in residence at Hoag Memorial Hospital Presbyterian. Her teaching activities focus on Asthma and COPD, as well as health care delivery during transitions of care. Her research interests include evaluating the impact of pharmacist interventions on high risk patient populations, innovations in pharmacy education, and development of student personal and professional growth. bethisho@chapman.edu

Bhayani, Shahzeem

Dr. Bhayani, a graduate of Ziauddin Medical University in Karachi, Pakistan, accomplished his residency at St. Elizabeth Youngstown Hospital in Ohio. His multifaceted interests span Point-of-Care Ultrasound, Medical Education, Health Care Disparities, High-Value Care, Mental Health in Primary Care, Health Care Advocacy, Preventive Health, and Perioperative Medicine. Currently, he holds the role of Associate Program Director at LSU Internal Medicine Program, where his active involvement centers on nurturing residents into adept clinical educators. Dr. Bhayani's commitment extends beyond clinical realms, reaching into advocacy, education, and addressing health disparities, encapsulating a holistic approach to medical practice. shahzeem.bhayani@lsuhs.edu

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Dmitry Bisk, MD, is an Associate Director at HonorHealth Scottsdale Osborn Family Medicine Residency Program in Scottsdale, Arizona. Along with his passion for medical education and patient care, he has a clinical interest in informatics and its application to physician wellbeing and quality improvement. He has constructed the curriculum for medication-assisted treatment and opioid prescribing policies for the residency program. dbisk@honorhealth.com

Bland, Tyler

Dr. Tyler Bland is a Clinical Assistant Professor at the University of Idaho and leads the pharmacology material at this site for the University of Washington School of Medicine. He earned his BS in Chemistry from Whitworth University and a PhD in Neuroscience from Washington State University. In medical education, Dr. Bland emphasizes the principles of the Cognitive Theory of Multimedia Learning. He developed 'Medimon,' an innovative tool in medical education that harnesses game-based learning and mnemonic systems, and has contributed to creating a comprehensive pharmacology website, BlandPharm. He has also been involved in developing an instructional EMR application that converts paper cases into interactive real-life cases. His outreach activities target rural and Native American high school students, and he has played a significant role in revising the WWAMI Medical Education Preclinical Phase curriculum for the University of Washington School of Medicine. tbland@uidaho.edu

Blankenship, Amanda

Amanda Blankenship is an associate professor in pharmacology at the University of Pikeville Kentucky College of Osteopathic Medicine and the Kentucky College of Optometry. Dr. Blankenship holds bachelor's degrees in Secondary Education Biology and Medical Technology, a master's degree in Curriculum and Instruction with an emphasis in Physics, and a PharmD. She is certified to practice as a pharmacist in Virginia and Kentucky. Before joining the University of Pikeville, she taught at the Appalachian College of Pharmacy and worked as a pharmacist in ambulatory, retail, and hospital

practice. At the University of Pikeville, Dr. Blankenship is a director of multiple courses in pharmacology, assists in curriculum and assessment development, and serves in leadership roles on many committees. She also has a heart for her community, serving on the Buchanan County Administrative Board of Directors for Social Services and as interim administrator at a local private school, Harman Christian Academy. amandablankenship@upike.edu

Bloom, Zachary

Dr. Bloom is a first-year resident in family medicine at RWJ Family Medicine Residency at CentraState. He is interested in geriatric medicine, education collaboration, and population health. Dr. Bloom's interest in education dates back to his honors thesis at the Kutztown University of Pennsylvania. It evolved into a project with ten other student researchers at its peak, allowing him to serve as a scientist and leader. Additionally, he is interested in fluidity, supply chain, and procedural deficiencies that can lead to adverse health outcomes. This includes limitations on health care set by governmental policy and insurance, both of which were the driving forces of his prioritization of a residency at a federally qualified health center. At the forefront of his residency are underserved patients who can be particularly vulnerable to systemic failures in medicine. Dr. Bloom works towards mitigating this through active roles in his residency, such as the program evaluation committee, which puts him in a role to analyze the functioning of his residency in relation to accreditation, all while finding ways to optimize the care delivered to its patients. He is also highly involved in quality improvement projects, which mainly target the early detection of diabetes and prediabetes in collaboration with six other residencies in New Jersey as a way to face a rapidly changing healthcare scene that focuses on early detection. zachary.bloom@rutgers.edu

Bojarski, Lauren

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Bokka, Leshya

Leshya Bokka is a third-year MD/MPH student at the Renaissance School of Medicine at Stony Brook University in New York. She earned her bachelor's degree in Cell Biology and Neuroscience and a minor in Women and Gender studies from Rutgers University in New Jersey. There, she contributed to publications investigating the role of hippocampal neurogenesis in mediating the antidepressant response in female mice and validating chronic stress paradigms. Before beginning her medical studies, Leshya worked as an emergency medical technician and a healthcare simulationist. Leshya's current clinical and research interests include understanding and improving the healthcare experiences of diverse patient populations. One active area of productivity is understanding how interdisciplinary and interprofessional medical education impacts patient outcomes and their experiences while in the hospital. A current project is developing an educational module to increase the early exposure of preclinical medical students to the medical interpreters' critical role in effectively bridging the language gap. leshya.bokka@stonybrookmedicine.edu

Boland, Allison

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Brennan, Matthew Thomas

Matthew Brennan is a third-year medical student and Curriculum Representative at the Wayne State University School of Medicine. He co-led the redesign project for the near-peer tutoring program at WSUSOM. Brennan's recent educational contributions include creating a Step 1 study package for students at multiple performance levels. He hopes to continue researching within the academic medicine field and advocate for further integrating near-peer programming into the medical school curriculum. mbrennan@wayne.edu

Breziner, Dalia

Dalia Breziner is a third-year medical student at the University of California, Irvine, School of Medicine (UCISOM). Dalia attended UC Berkeley and attained a BA in Molecular Cell Biology-Immunology. Dalia's unique experience as a daughter of Jewish Latin immigrants and prior opportunities working

as a medical assistant and resource specialist have shaped her excellent advocacy for minority populations, work ethic, and problem-solving spirit. At UCISOM, Dalia is actively involved in disparity research regarding COVID-19 thromboembolic complications within the UC system (using the newly developed UC CORDs EHR database), peer tutoring, and the Program in Medical Education for the Latin Community (PRIME-LC). Dalia previously served as Co-Vice President of Outreach for the Latino Medical Student Association and as Health Policy Elective Coordinator. She is the Co-VP of Education of the Dermatology Interest Group, a tutor in the Collaborative Learning Communities Program, and a coordinator for the Spirituality in Medicine Elective. After graduation, she plans to pursue a career in rheumatology/dermatology and healthcare administration and policy. dbrezine@hs.uci.edu

Brothers, Kendall

Kendall Brothers is from Atlanta, Georgia. She attended the University of Michigan for her undergraduate degree, where she studied Biomolecular Science and History. She started at Wayne State University School of Medicine in 2022. She is involved in the Institute for Healthcare Improvement and hypertension research with the Wayne Health Mobile Unit. Kendall is expected to graduate from Wayne State University School of Medicine in June 2026 and is interested in exploring further opportunities in medical education and community-based healthcare. Kendall worked on this project as the vice president of the Wayne State School of Medicine Institute for Healthcare Innovation (IHI) student organization with support from Annie, the IHI president. She worked on this project with support from the other IHI members (Mithil Gudi, Sohini Pandit, and Cecilly Kelleher) and the faculty advisor Dr. Diane Levine. hl9181@wayne.edu

Bryson, William

William L. Bryson has worked in Graduate Medical Education (GME) as an Education Program Coordinator at Mayo Clinic in Jacksonville, Florida, for the past two years, supporting the Pulmonary Disease and Critical Care Medicine, Endocrinology, Diabetes, Metabolism, and Colon and Rectal Surgery Fellowship Programs. He holds a Bachelor of Science in Nutrition-Wellness from Auburn University and is pursuing a Master of Arts in Discipleship from New Orleans Baptist Theological Seminary. William is an Instructor in Medical Education and a Well-Being Champion at the Mayo Clinic. His previous professional roles include Nutrition Education Specialist and Program Coordinator for South Carolina WIC. bryson.william@mayo.edu

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Buery-Joyner, Samantha

Samantha Buery-Joyner, MD, is a Professor of Medical Education on the Instructional Faculty track at the University of Virginia School of Medicine. She has a broad background in medical education, with specific training from the Association of Professors of Gynecology and Obstetrics (APGO) Educational Scholars and Leaders Program Fellowship, Master Teacher Leadership Development Program, and Stanford Clinical Teaching Certificate. Dr. Buery-Joyner has multiple publications in medical education, expanding the clinical learning environment and mistreatment, effective teaching strategies, curricular innovation, simulation, and technology, incorporating the electronic medical record into medical education, professional development of medical educators, wellbeing in medical education, and educational guidelines for diversity and inclusion. Additionally, she has given numerous well-received national presentations in these medical education areas. samantha.buery@inova.org

Bui, Molinna

Molinna Bui is a current medical student at University of Wisconsin School of Medicine and Public Health pursuing her dual MD/MPH degree. Her clinical interests include family medicine and community health, and she seeks research opportunities that focus on health equity/health disparities. mbui3@wisc.edu

Cabaniss, David

Dr. David Cabaniss is a current emergency medicine resident at LSU Health Shreveport in his PGY-2 year. He attended the University of Virginia, achieving his Bachelor of Science in biology before completing his MD at the University of Queensland-Ochsner Medical School. While obtaining his medical degree, Dr. Cabaniss presented abstracts at conferences, including Ochsner's 17th Annual Research Day, Princess Alexandra Hospital Orthopaedic Research Showcase in October, and the University of Queensland Medical Society Research Conference and Showcase. After completing his residency, he intends to apply for a wilderness medicine fellowship and continue educating other medical professionals in caring for individuals in remote and austere environments.

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Callard, Helen

Helen Callard received a Master's in Physics with Astrophysics from the University of Sussex in 2016. She then worked in health communications for Cancer Research UK before accepting a place to study medicine at the University of Oxford. While at Oxford, Helen has focused on expanding medical education opportunities for those from underrepresented backgrounds. She established the Oxford branch of the Phoenix Project, an initiative to support the qualification of displaced doctors to practice in the UK. Helen pioneered the use of workshops to promote the importance of equity within healthcare. After graduating this year, she will take up a post at the Royal Free Hospital.

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Calles, Ignacio

Ignacio Calles, MD, is an emergency medicine physician and fellow in medical education at USC Keck School of Medicine. His main academic interest is diversity and inclusion in medicine and medical education. I focus on programs and curricula targeting minority medical students with focuses that include the clinical learning environment, the transition to residency, and student success in research. My long-term career goal is to increase the number of diverse physicians and to better support diverse and underrepresented learners to be the best practitioners they can be.

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Camero, Karen

Karen Camero is a general pediatrician at Children's Hospital Los Angeles. She completed her pediatric residency and general academic fellowship in health equity at Children's Hospital Los Angeles. Her primary research interests include promoting positive parenting education in the Spanish speaking population. Her interest in medical education led her to pursue a Master's in Academic Medicine at USC, which has given her the tools to implement several educational curricula at her institution regarding the delivery of age-appropriate anticipatory guidance. She is passionate about supporting physicians who are navigating parenting while managing work and academic responsibilities, through empathy and self-compassion. karen.a.camero@gmail.com

Campusano, Jessica

Jessica is an instructional designer responsible for supporting the technology training needs of HWCOM through the development and design of resources and workshops, contributing to curriculum enhancement projects, and providing leadership and guidance on the effective use of technology to support learning. Her background in training and strategic communication informs her ability to coach others in leveraging technology to achieve more. Jessica also serves as an adjunct faculty for first-year undergraduate students. She earned a bachelor's in communication and a master's in education from Florida International University. jegirald@fiu.edu

Canton, Julia

Malorie Carter is a third-year medical student at the University of Utah. She was born on Long Island, New York, and graduated from high school in North Carolina. Family ties to Utah prompted her to move out west, where she was captivated by snowboarding and drives through the canyons. Malorie enjoys spending time with her husband, daughter, and two dogs and composing music on the piano. Malorie is interested in radiology, addiction medicine and advocacy, and academic medicine.

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Carter, Malorie

Nicole Carvajal is excited to submit the abstract: "Developing weight inclusivity in medical curricula through a trauma-informed medical education lens" to the Innovations in Medical Education 2024 Conference as a medical student at the University of California, San Francisco (UCSF). As a passionate advocate for improving medical education, she is dedicated to exploring innovative ways to enhance the learning experience for future healthcare professionals. She is pursuing her medical degree at the University of California, San Francisco (UCSF). Her commitment to medical education has been honed through my experiences in curricular development for problem-based learning courses and being part of curricular advising student groups. She has actively participated in various research projects to enhance medical education throughout her academic journey. Her research has primarily focused on diversity, equity, and inclusion in ophthalmology residency and trauma-informed medical education for faculty and students in undergraduate medical education. These research avenues have led to publications and workshop presentations. Nicole's long-term aspiration is to pursue a career in academic medicine, focusing on medical education research and curriculum development. She is committed to continuously exploring innovative approaches to teaching and learning to prepare future physicians with the skills needed to excel in a rapidly evolving healthcare landscape. malorie.carter@hsc.utah.edu

Carvajal, Nicole

Julia Caton, MD, EdM, joined the Division of Hospital Medicine at Long Island Jewish Medical Center in 2022. Previously, she served on the faculty at Stanford School of Medicine and Harvard Medical School. Her primary interests include undergraduate medical curricular design/evaluation and defining the role of Hospitalists as leaders in clinical teaching. She is also an expert in survey methodology and has given several national lectures on this topic. She is a core faculty member at the Zucker School of Medicine, where she co-directs the course Patient, Physician, and Society, which spans the first two years of medical school. While on faculty at Stanford, she was awarded the Henry J. Kaiser Family Foundation Award for Excellence in Clinical Teaching from the School of Medicine and the David Ryland Clinical Teaching Award from the Internal Medicine Residency Program. She completed a residency in internal medicine at Brigham and Women's Hospital and a fellowship in medical education at Brigham and Women's Hospital and Harvard Graduate School of Education. She received her medical degree at Columbia College of Physicians and Surgeons and a Bachelor of Arts from Yale University. nicole.carvajal@ucsf.edu

Chalk-Wilayto, Janine

Dr. Janine Chalk-Wilayto, PhD joined the Mercer University School of Medicine (MUSM) in July 2015. At MUSM, her primary role is medical education, and she teaches Gross Anatomy in first, second, and fourth years of the preclinical curriculum. Dr. Chalk-Wilayto earned her PhD from George Washington University in Biological Anthropology in 2011. She then completed a postdoctoral fellowship at the Center for Functional Anatomy and Evolution at the Johns Hopkins School of Medicine. Her position at Johns Hopkins sparked her interest in best practices in education across the medical continuum (medical student to clinician). Her research interests are broad, and she views collaboration as a pillar of education and research excellence. She is co-PI on an NSF-funded collaborative project investigating the intersection of feeding ecology and anatomic development in capuchin monkeys. She is also part of a seven-institution team currently publishing research on professional identity development in basic science medical educators. This IAMSE-supported work aims to identify how basic scientists foster research and teaching identities in US medical schools and how departments can best support these faculty. chalk_jm@mercer.edu

Chandlee, Emma

Dr. Emma Chandlee graduated from Mercer University in Macon, Georgia, in 2018 with a Bachelor of Science in Biology and a minor in Chemistry. She graduated Magna Cum Laude from Mercer University College of Pharmacy in Atlanta, Georgia, in 2022 and completed her PGY-1 pharmacy residency at UF Health Jacksonville. Her current professional interests include ambulatory care and internal medicine. emma.chandlee@jax.ufl.edu

Chang, En

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Chang, Jessica

After undergraduate studies at Yale University, Dr. Jessica Chang spent a year volunteering in China and then attended Duke University School of Medicine. As a medical student, she was selected as a Howard Hughes Medical Institute NIH Research Scholar. Dr. Chang spent two years at the National Eye Institute doing basic and clinical research in ophthalmology. She then completed her ophthalmology residency at the Wilmer Eye Institute, followed by ASOPRS (American Society of Ophthalmic Plastic and Reconstructive Surgery) fellowship training in Oculoplastics and Neuro-ophthalmology. Her professional interests include age-related changes and diseases of the eyes and periorbital structures, international ophthalmology, epidemiology, and medical education. Outside of ophthalmology, she enjoys drawing, painting, swing dancing, and yoga. jessica.chang@med.usc.edu

Chase, Amanda

Dr. Amanda J. Chase is an Associate Professor of Medical Education at Nova Southeastern University College of Allopathic Medicine where she contributes to global course design and case writing for an integrated, case-based learning curriculum. She earned her Ph.D. in Cellular and Molecular Medicine at Johns Hopkins University School of Medicine and completed postdoctoral research on viral immunology at the Centers for Disease Control and Prevention. She has a decade of experience implementing diverse active learning approaches in integrated medical programs. Dr. Chase contributes to faculty development nationally and has facilitated dozens of workshops on the scholarship of teaching and learning at leading conferences on health professions education. She is Chair of the IAMSE Educational Scholarship Committee and has facilitated six focus sessions at annual IAMSE meetings and pre-conference workshops at the 2021 and 2023 meetings.
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Chaudhry, Shiven

Dr. Shiven Chaudhry has a rich background in healthcare and education. He earned his medical degree from Rush University Medical Center in Chicago, IL, followed by an Internal Medicine Residency at Cedars Sinai in Los Angeles, CA. Driven by a passion for holistic healthcare, he pursued an Integrative Medicine fellowship at the University of Arizona in Tucson, AZ, becoming board-certified in Internal Medicine and Integrative Medicine. Currently serving as Assistant Professor and Assistant Director of Integrative Medicine at the Kirk Kerkorian School of Medicine at UNLV, Dr. Chaudhry plays a vital role in teaching integrative medicine and internal medicine in Las Vegas. His dedication to medical education extends beyond the classroom, as he actively imparts his knowledge in the hospital as a teaching faculty to medical residents at the Valley Health System and University Medical Center in Las Vegas. He is actively involved in research and has also been recognized as a cultivating leader in academic Integrative Medicine by ACLAIM-Andrew Weil Institute at the University of Arizona, showcasing his commitment to advancing integrative medicine. In addition to his academic contributions, Dr. Chaudhry is the visionary founder of the Dr. Shiven Integrative Medicine Clinic, where he practices a comprehensive approach to healthcare, integrating conventional and complementary therapies for patient wellbeing. shiven.chaudhry@unlv.edu

Chaves Ferreira, Mateus

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Chen, Chien-Rong

Chien-Rong Chen, DO, Clinical Fellow, Pediatric Hospital Medicine, Children's Hospital Los Angeles. I am a Clinical Fellow in pediatric hospital medicine and am training to take care of and improve care of

hospitalized children with both acute and complex, chronic medical problems. The position also includes further training in medical education, quality improvement, patient safety, and research. My primary interest is in medical education and I am currently working towards developing rigorous skills in curriculum development and evaluation. My ultimate goal is to help support future educators and clinicians to be the best version of themselves. I am happily married to a future Pediatric Infectious Diseases doctor-in-training, and I look forward to consulting her constantly in the future! My hobbies include cycling, practicing martial arts, and spending time with my family. My highest strength (VIA Character Strength's survey) is "honesty." cchen@chla.usc.edu chienroc@usc.edu

Cherin, Neyha

Neyha Cherin, DO, is an Assistant Professor in the Department of PM&R at Penn State Milton S. Hershey Medical Center. She focuses on musculoskeletal ultrasound (MSK-US) and its benefits in improving patient care. She completed multiple formal ultrasound hands-on, interactive conferences. Dr. Cherin is experienced in MSK-US diagnostic and therapeutic techniques. Her clinical responsibilities include addressing patients' medical and functional needs and teaching and mentoring via an immersive learning approach. Dr. Cherin was named Teacher of the Year for the 2019-2020 and 2021-2022 (PM&R) cycles and Exceptional Teacher by Graduate Medical Education in Nov. 2020. In addition, she mentors minority physicians interested in PM&R. She implemented informal hands-on bedside teaching and is the director of a novel formal, yearly MSK-US course for the residents. Dr. Cherin received certification from the Simulation Teacher Course at Hershey Medical Center. ncherin@pennstatehealth.psu.edu

Cheung, Clement

Dr. Clement Cheung is a Clinical Associate Professor in Pediatrics at the Keck School of Medicine of the University of Southern California. He received his MD and PhD from the University of Washington and studied Leptin as a nutritional signal to the onset of puberty. Dr. Cheung did his pediatric residency and endocrinology fellowship at the University of California, San Francisco, where he was an adjunct Assistant Professor and performed his K08-funded research in the hypothalamic control of energy homeostasis. Dr. Cheung attends the Children's Hospital of Los Angeles and is the Director of the Combined NeuroEndocrinology-NeuroOncology Clinic, providing care for children with brain tumors at risk for endocrine late effects. He is the Associate Fellowship Director and the Director of Endocrine Medical Education for Residents and Medical Students. Dr. Cheung is passionate about medical education. He has received multiple residency teaching awards at UCSF and CHLA, including the Annual Philip E. Rothman Memorial Award for Excellence in Pediatric Resident Education in 2020. ccheung@chla.usc.edu

Cheung MD, David

Dr. David Cheung is a current resident physician at the UC-Irvine Internal Medicine Residency program who graduated from Saint Louis University School of Medicine. He won the class award for Intern of the Year due to his excellent and compassionate care toward his patients. He has been selected to be chief resident during the 2024-2025 Academic Year and hopes to pursue a gastroenterology fellowship eventually. dlcheung@hs.uci.edu

Christman, Grant

Grant Christman is the Director of Education of the Division of Hospital Medicine at Children's Hospital Los Angeles and Pediatrics Clerkship Co-Director and Assistant Professor of Clinical Pediatrics at the Keck School of Medicine of the University of Southern California. His medical education interests include e-learning course development, utilizing quality improvement methodology to address educational challenges, and teaching and evaluating health systems science competencies in undergraduate medical education. gchristman@gmail.com

Clare, Camille

Camille A. Clare, MD, MPH, CPE, FACOG, is a board-certified obstetrician and gynecologist. She received her medical degree from the Albert Einstein College of Medicine, Bronx, New York. Dr. Clare completed her obstetrics and gynecology residency at the State University of New York at Buffalo. She obtained a Master of Public Health in Health Policy and Management at New York Medical

College. She is a Certified Physician Executive as conferred by the Certifying Commission on Medical Management. Dr. Clare is a Tenured Professor and Chair of the Department of Obstetrics and Gynecology of \Downstate Health Sciences University (DHSU) College of Medicine and a Professor of Health Policy and Management at the DHSU School of Public Health. Dr. Clare has been an active member of the American College of Obstetricians and Gynecologists (ACOG), serving in leadership roles on the section, district, and national levels and on several national committees. She is the immediate past chair of ACOG District 2 and currently serves as National Secretary. Dr. Clare is an active member of the National Medical Association (NMA) and has served in leadership roles on the local, regional, and national levels. She is the NMA Region 1 Trustee, Chair of the NMA Obstetrics and Gynecology Section, and Finance Chair of the NMA Board of Trustees.
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Cleary, Hannah

Hannah Cleary is a medical student at the University of Kentucky College of Medicine (UKCOM). Cleary is interested in pursuing a career in academic surgical medicine and is currently researching in the Department of Surgery as a funded Professional Student Mentored Research Fellow (PSMRF) in the Clinical and Translational Research Scholarly Concentration. Her clinical research focuses on the diagnosability of blunt cardiac injury in the setting of acute trauma and critical care. Additionally, Cleary serves as a Medicine Student Ambassador and member of the Medical Student Curriculum Committee and Pass/Fail Grading Structure Task Force at UKCOM. Cleary earned a Bachelor of Science in Agricultural and Medical Biotechnology from the University of Kentucky. As a member of the Lewis Honors College at the University of Kentucky, Cleary served as a peer mentor and lead peer mentor, personally overseeing over sixty incoming students and forty peer mentors. This undergraduate mentorship experience included tasks such as the establishment of organizational infrastructure and documentation and execution of engaging enrichment activities during orientation and throughout the academic year. The experience also included coursework focused on peer mentorship for college students. Cleary is part of the inaugural (2023-2024) cohort of UKCOM MedMentors supporting first-year medical students. hannahcleary@gmail.com

Cohen, Katey

Dr. Cohen grew up in Huntingdon Valley, PA. She then went to Temple University where she majored in Biology and minored in Spanish. Following her undergraduate career, she joined Teach for America where she taught high school science in Bridgeport, CT. During this time she completed her Masters in Education at Johns Hopkins University. Dr. Cohen then completed her medical degree at the Lewis Katz School of Medicine at Temple University. She is currently an Emergency Medicine PGY-2 at Temple University Hospital where she remains interested in education and teaching. In her free time she can be found playing tennis, cooking, running along the river trail or practicing yoga.
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Colao, Bliss

Bliss Colao is a third-year medical student at the University of Florida College of Medicine (UF COM) in Gainesville, FL. She is currently interested in pursuing a career in dermatology. Bliss serves as her medical school class Community Service Co-Chair. She is the secretary for the board of SportsAbility Alliance, a Florida-based non-profit aiming to enrich lives through accessible, inclusive recreation. Bliss is passionate about medical student wellness and has spent her time in medical school researching ways to improve wellness at UF COM. blisscolao@ufl.edu

Cormier, Lily

Lily Cormier is a second-year medical student at the University of Texas Medical Branch at Galveston. She is interested in practicing vascular surgery or internal medicine. In her free time, she enjoys interacting with individuals with disabilities, and she is an officer of a student organization that provides community service opportunities for those interested in working with these individuals.
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Cross, James

In his third year at Drexel University College of Medicine, James Cross is dedicated to medical

education and merging business concepts with healthcare. He obtained a Mathematics degree from the University of Colorado at Boulder in 2018, during which he founded "Pages for Prisons," a nonprofit supplying books to Colorado prison libraries. Furthering his education, he earned a Master of Business from Northcentral University in La Jolla, California, in 2021. Over the past four years, James has been an MCAT tutor and lecturer for Altius Test Prep and Jack Westin, specializing in reading comprehension and personalized study strategies. During his second year of medical school, he excelled as a Medical Scholar, offering comprehensive exam reviews to first-year students—his commitment to mentoring extended to one-on-one guidance for a first-year student. James also demonstrated leadership as a clinic coordinator for Smoking Cessation, delivering counseling services to shelters in Philadelphia. Collaborating with the Philadelphia Department of Public Health, he successfully integrated a lasting smoking cessation curriculum that remains implemented across these locations. As a Business of Healthcare scholar, he utilized Monte-Carlo simulations to investigate the economic impact of Locum Tenen physicians on hospital systems. jdc384@drexel.edu

Cross, Joseph

Dr Joseph Cross has PhD in genetics from Latrobe University, Melbourne, Australia. His doctoral topic was on marsupial MHC genomics. Following his postgraduate study, he was a postdoctoral fellow at the Louisiana State University Health Sciences Center, researching genes involved in prostate cancer. Following his postdoctoral work, he took a position as Lecturer in molecular biology at Holmesglen Institute in Melbourne, Australia, where he pioneered the introduction of DNA barcoding and PBL into post-secondary education in Australia. He is currently Assistant Professor at the Xavier University School of Medicine on Aruba in the West Indies. His research focusses on the integration of AI into medical education. He is also currently a Visiting Assistant Professor in the Department of Microbial Pathogenesis and Immunology, College of Medicine, Texas A&M Health Science Center, where his research focusses transmissible disease diagnosis using CRISPR. cross148@gmail.com

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Da Silva, Zarek (Hezro)

Hezro Da Silva is a second-year medical student at the University of Utah Spencer Fox Eccles School of Medicine. He is a founder and student leader of the Orthopaedic Student Run Clinic at the Fourth Street Community Clinic in Salt Lake City, Utah. He actively volunteers at community clinics in the Salt Lake Valley, providing Spanish speaking care to patients as a native speaker. He graduated from Westminster College in Salt Lake City in 2022, majoring in chemistry and was an active volunteer at a local boxing gym for underserved youth. He is interested in orthopaedic surgery and hopes to use his experience to provide care to the underserved as a surgeon in the future. Zarek.DaSilva@hsc.utah.edu

Dang, Linh

Linh Dang is a second-year medical student at Indiana University School of Medicine. She earned her Bachelor of Science in Neuroscience and Psychology from Indiana University, a Chemistry minor, and a Clinical Psychological Sciences certificate. As an undergraduate, she assisted in a pilot clinical trial of a new psychological treatment and conducted individual research focusing on the relationship between chronic pain and trauma. Her interest in untangling the relationship between mental and physical health further propelled her to pursue medicine. She plans to become a physician with hopes of decreasing the barriers to health for those seeking mental health care and improving the quality of care for these individuals. Currently, Linh serves on her campus's Diversity, Equity, and Inclusion committee and volunteers her time tutoring at a local non-profit organization. lindang@iu.edu

Dang, Tony

Dr. Tony Dang is a clinical assistant professor of medicine at Wake Forest School of Medicine in Charlotte, NC. He attended the University of North Carolina for his undergraduate education and, during this time, realized teaching was one of his passions. Dr. Dang graduated from Wake Forest

School of Medicine and completed an internal medicine residency at Carolinas Medical Center in Charlotte, NC. He has been on faculty since finishing and has won numerous awards for teaching students and residents. Dr. Dang helps co-direct the transitions to residency courses for graduating fourth-year medical students. He is co-leading the development of the clinical skills curriculum for the new medical school in Charlotte. anthony.dang@atriumhealth.org

Daniels, Keyanna

Keyanna Daniels is a second-year medical student at the UCI School of Medicine. She is from Long Beach, CA, and graduated from USC in 2020 with a Health Promotion and Disease Prevention degree and a double minor in natural sciences and screenwriting. After her time at USC, Keyanna joined the California State Executive Fellowship and worked on health policy at the California Department of Healthcare Services. Following this experience, she went on to work as a Clinical Research Coordinator, running multiple trials looking at new drugs for the treatment of PTSD, BED, and ADHD. Now at the UCI School of Medicine, she serves as a LEAD-ABC Scholar, where she further enhances her medical education by learning and implementing initiatives to address health disparities in the African, Black, and Caribbean (ABC) communities. She is interested in multiple specialties, particularly primary care and psychiatry. keyannad@hs.uci.edu

Daniels, Kristin

Kristin Daniels is a first-year medical student at the UC San Diego School of Medicine (UCSD SOM). She completed her undergraduate degree at UCLA. At UCLA, Kristin researched a broad spectrum of healthcare disciplines. She contributed studies focused on optimizing antibiotic regimens for Early-Onset Neonatal Sepsis. In addition, Kristin explored the positive impact of exergaming on aerobic performance in children facing the unique challenges of Fetal Alcohol Spectrum Disorder and Attention-deficit/Hyperactivity Disorder (ADHD). As she progresses through her medical education at UCSD SOM, she intends to develop her skills and knowledge while maintaining a strong focus on research and its potential to improve healthcare outcomes. Her long-term goal is to become a compassionate and accomplished healthcare professional dedicated to clinical practice and advancing medical science. krdaniels@health.ucsd.edu

Danner, Ana

Ana Danner, a second-year medical student at Indiana University School of Medicine, graduated from Indiana University-Purdue University Indianapolis (IUPUI) in 2022 with a Bachelor of Science degree in biology, neuroscience, and psychology, complemented by minors in chemistry, Spanish, and liberal arts perspectives on culture & health. Throughout her studies, Ana has remained engaged with her passions of peer mentoring and health outcomes research. Her fulfilling experiences in these mentoring and research roles and her years of working as an EMT in Indianapolis amidst the COVID-19 pandemic have driven her future career aspirations as an empathetic physician-advocate. Ana values patient rapport and aims to establish enduring partnerships with both her patients and the greater community. Ana is keenly interested in mental health and the socioeconomic factors influencing healthcare access and utilization. Her current top specialties of interest include internal medicine, psychiatry, and family medicine. Ana's ultimate goal is to provide individualized quality care regardless of her chosen specialty, positively impacting her patients and the broader community. anadann@iu.edu

Dash, Angela

Dr. Dash has over 23 years of leadership experience and is the founder and president of The Pace Institute and creator of Surface Your Greatness®. She works with individuals and organizations from diverse industries, communities, and geographical locations as an advisor, coach, dialogue facilitator, trainer, and conflict management consultant. Her mission is to help others learn, grow, and change the world; she is known to be an evoker of greatness. Dr. Dash has a bachelor's degree in Conflict Analysis and Resolution from Spelman College and a PhD in Conflict Analysis and Resolution from Nova Southeastern University. Dr. Dash joined the Kaiser Permanente Bernard J Tyson School of Medicine in 2022 to lead the Office of the Ombuds, serving as the inaugural Ombuds. This program provides confidential, independent, informal, and impartial conflict resolution services to all faculty, staff, and students. angela.x.dash@kp.org

Davis, Konnor

Konnor Davis is a third-year medical student at the University of California, Irvine, School of Medicine (UCISOM). Originally from Northern California (Sacramento), Konnor attended community college for three years and then UC Davis for two years, earning a BS in Biological Sciences. His experience in emergency medicine research and child and adolescent psychiatry helped him establish excellent communication, collaboration, and analytical skills while working with diverse populations. At UCISOM, Konnor is engaged in emergency medicine research (involving children with neurodevelopmental disorders), medical education research, peer tutoring, and restructuring and reducing the financial burden of medical students (currently, he and his partners have saved UCISOM students over \$75,000). He serves as the Director of Operations for the UCISOM ZotUnity program, a tutor in the Collaborative Learning Communities program, the Vice President of Advising for the Emergency Medicine interest group, and Co-President/Co-Founder of the Centralization of Medical Education Tactics interest group. He is planning on pursuing a career in emergency medicine following graduation. konnord@hs.uci.edu

Davis, Logan

Logan Davis is an MD student at the University of Louisville (UofL) School of Medicine who is interested in neurology. He received a Bachelor's in Biomedical Sciences from Morehead State University, graduating from the George M. Luckey Jr. honors program in 2020. Logan served as the class representative for both Neuroanatomy and Clinical Neurology, which involved working with faculty to create study resources and review sessions and tutoring classmates. He is passionate about expanding access to care for all patients equitably, a driving force in his participation in a weekly free clinic operated by UofL and volunteering at a health outreach/education-based clinic run by his classmates. Logan is also very passionate about medical innovation and the concept of biodesign, leading him to become the president of the Innovation in Medicine organization to expand the student body's knowledge of medical innovation and participating in the Bluegrass Biodesign program, using the principles of biodesign to find an unmet clinical need and form a proof-of-concept prototype to solve it. His team worked to create a device to allow patients with a tremor or mobility issue and concomitant urinary retention to self-catheterize without needing assistance. He is now one of the co-presidents of Bluegrass Biodesign, pushing to add more health equity into the program, securing funding for the future, and establishing community partners to expand the program's reach in our community. cldavi34@louisville.edu

De Santis, Jessica

Dr. De Santis is a non-clinical faculty within the Department of Anesthesiology at the Medical College of Wisconsin (MCW). She has spent the last ten years in the field of Education, teaching across the lifespan from early adolescence to adult learners. In her current position as the Education Specialist at MCW, she works to develop and implement novel curricula for graduate medical education, supporting early career physician educators, resident and fellow trainees, and fellow faculty interested in educational research to develop a strong understanding of community engagement and education best practices. Dr. De Santis and her colleagues have developed an Education and curriculum that focuses on the topics of wellness, community-engaged research, professionalism, individualized learning plans, diversity, equity, and inclusion in Education and the workplace, how to best self-reflect as a learner or educator, and strategies for effective feedback and growth mindedness. Her research interests include implementing innovative techniques for increasing physician self-efficacy and empowering adult learners to build strong social networks to enhance the best downstream outcomes of policies and practices for equitable healthcare and addressing social determinants of health. jdesantis@mcw.edu

Desar, Simrina

Simrina Desar is currently a third year medical student at UC Riverside School of Medicine, Class of 2025. Prior to medical school she completed her Bachelor of Science in Physiological Sciences from UCLA in 2021. Her interests in healthcare and medicine include disability studies, adverse childhood experiences, and school-based advocacy for children. She is hoping to continue these interests into her future career. sdesa010@ucr.edu

Deshpande, Rucha

Rucha Deshpande is a third-year medical student at the Keck School of Medicine of USC. She earned a degree in Neuroscience with a minor in Education Studies from the University of California, Los Angeles. Rucha has been involved in course development since her undergraduate years, contributing to the formation of the First-Year Scholars Program at UCLA. She has continued to further her interests in education and curricular initiatives through her role as a Curriculum Representative for the Keck Class Council. rmdeshpa@usc.edu

Dhaliwal, Khushwant

Khushwant Dhaliwal is a fourth-year medical student at the Kaiser Permanente School of Medicine in Pasadena, California. Originally from Connecticut, she graduated from Yale University in 2019 with a bachelor's degree in biology. After her undergraduate education, Khushwant worked at a community mental health center and volunteered for a street psychiatry team. In medical school, she has devoted her time to grassroots mutual aid efforts in Los Angeles County. She is interested in medicine and health in contexts outside of hospitals and clinics, such as street outreach, home-based care, and community health spaces. She is also interested in narrative medicine and restorative justice as tools to facilitate community building and learning. khushwant.k.dhaliwal@kp.org

Diller, David

Dr. Diller is an assistant professor of clinical emergency medicine. He is the assistant dean for clinical curriculum at the Keck School of Medicine of USC. Prior to arriving at USC, he completed his residency in emergency medicine at Mount Sinai St. Luke's-Roosevelt Hospital Center, a fellowship in medical education at Oregon Health & Sciences University, and a Masters in Health Professions Education at the University of Illinois - Chicago. He was recently selected by the Macy Foundation as a Macy Faculty Scholar, and his academic areas of interest include educational innovation and curriculum development. david.diller@med.usc.edu

Dong, Sydney

Sydney Dong is a third-year medical student at the University of California San Diego School of Medicine. She is a research associate who works with Dr. George Hightower, Associate Professor of Dermatology and Pediatrics, on clinical and research initiatives at UCSD Health and Rady Children's Hospital San Diego. These initiatives center on improving the patient experience by enhancing comprehensive and compassionate care. Sydney's previous work with underserved communities includes planning health fairs for the Vietnamese communities in Orange County, coordinating free clinic patient-provider visits, delivering groceries and medications to free clinic patients during the COVID-19 pandemic, and mentoring first-generation students to navigate the college admissions process. Other creative instructional endeavors include creating free clinic newsletters, making YouTube videos to assist pre-medical/health students of all backgrounds in advancing their careers, redesigning the School of Medicine's campus website, and publishing narrative medicine works at UCSD School of Medicine. Her current work includes enhancing clinical care by creating tools that facilitate shared decision-making in adolescent patients and optimizing EHR use for all trainees and medical students at UCSD Health and Rady Children's Hospital. She is also interested in assessing the interaction of social factors on children's health. s3dong@health.ucsd.edu

Dougherty, Rebecca

Rebecca Dougherty, MD, MEdc, has been a hospitalist at Long Island Jewish Medical Center since 2016. Her clinical and research interests have centered on addressing patients' social determinants of health, work she has been engaged with across the continuum from undergraduate, graduate and continuing professional development. She has developed regional and national recognition for her efforts, sharing her work at this year's annual American Association of Medical Colleges and Society of Hospital Medicine conferences. She serves as a Principal Advisor for Northwell's Center for Equity of Care where she co-leads the Interprofessional Education Workgroup for Northwell's SDOH collaborative, is the physician co-lead for the Health Disparities Work Group at LIJMC and serves on the Medicine Service line DEI Leadership Council. She is also a core faculty member at the Zucker School of Medicine where she leads the Health Equity curricular thread and co-directs ZSOM's Committee for Antiracism and Allyship. She is an active member of the Northeast Group of Education

Affairs Health Equity special interest group. She completed her residency in Internal Medicine at Cooper University Hospital and her medical degree at Temple University and received a Bachelor of Arts from Kenyon College. rdoughert2@northwell.edu

Drummond, James

Dr. James Drummond, Director of the Master of Science in Preclinical Sciences (MSPCS), Associate Professor of Microbiology, Department of Biomedical Sciences, Mercer University School of Medicine (MUSM), Macon, GA. He received his PhD from the Johns Hopkins University School of Hygiene and Public Health in 1996. His background is in Epidemiology, Vaccine Development, and Biologics drug development. From 1998 to 2010, he worked in the pharmaceutical industry on vaccine and biologic development. He is an expert on serologic and cell-based assays for research and diagnostics. He has worked in medical education since 2013, beginning at the Reading School of Health Sciences and Alvernia University. He has been at the Mercer University School of Medicine since 2017. He has published 34 articles, 18 abstracts, and holds two patents. He is currently reviewing for three different journals. His expertise is in Immunology, Vaccines, and Microbiology. He currently facilitates two small group modules in the MUSM and teaches Human Immunity in the MSPCS program. drummond_j@mercer.edu

Dunn, Victoria

Dr. Vicky Dunn is a Clinical Associate Professor of Family Medicine at Keck School of Medicine of USC. A British-trained Family Physician, she graduated from Newcastle University Medical School in the UK and practiced in the North East of England for 15 years before moving to the USA. Dr. Dunn became faculty in the Keck Department of Family Medicine in 2015. She enjoyed teaching medical students and residents in the UK and has continued to enjoy that through USC. Dr. Dunn oversees training medical students and faculty development in the USC Student Health Clinic and is Co-Director of Keck School of Medicine's Introduction to Clinical Medicine course. She is currently participating in the Masters of Academic Medicine Program at USC. victoria.dunn@med.usc.edu

Ekitok, Sophie-Rose

Sophie-Rose Ekitok is a final year medical student at the University of Leeds. She also studied Enterprise and Entrepreneurship at the Leeds School of Business. Her combined interest in entrepreneurship and medical education sparked the creation of an academic planner designed for medical students to use on clinical placements. In the near future, she hopes to launch the academic planner in the UK and online. sophieroseekitok@googlegmail.com

Elkhamisy, Fatma Alzahraa

Fatma Alzahraa A. Elkhamisy, PhD (Pathology), MHPE (Health Professions Education), AMEEAF, is an assistant professor of Pathology and in Charge of the International Students Administration at the Faculty of Medicine at Helwan University, Cairo, Egypt. She is an Associate AMEE (Association for Medical Education in Europe) Fellow, UK, and a FAIMER Fellow at the International FAIMER Institute, Philadelphia, USA, class 2023. She has recently been appointed as an Ambassador of the the International Association of Medical Science Educators (IAMSE), USA, in Egypt. In addition, she is a member in the Association for Medical Science Educators (ASME), UK. Besides her work as an assistant professor of pathology, she occupied other educational roles, including an Exam Committee member, Internal Exam Moderation Committee member, Head and Assistant head of the International Medical Students' office, and an academic coordinator. She has a master's degree in Health Professions Education from a joint program from the School of Health Professions Education, Maastricht University, the Netherlands. Since being promoted to assistant professor, she has implemented many innovative instructional and formative assessment interactive methods in medical education. She has internationally published articles in medical education and participated in international medical education conferences as a presenter and trainer like the AMEE, APMEC, IME, TUFH, and IMEC conferences, in which she has published and presented her work on interactive learning, including her work on memes. She also reviews medical education manuscripts and abstracts in international journals and conferences. Dr. Elkhamisy has been selected by the Pathologist Magazine, UK, selected as one of the most inspiring pathology educators in The Power

List 2022, Voyage of Discovery Category (Category of Mentoring and Education).
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Elsharaky, Hala

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Eremita, Nicholas

Nicholas Eremita grew up in sunny Pasadena, California, and to Loma Linda to attend the California University of Science and Medicine (CUSM) for medical school. He graduated from the University of San Francisco in 2019 with a BS in Physics and a Minor in Chemistry. During his gap years, Nicholas worked as a medical scribe for Cedar Sinai Marina Del-Rey Emergency Department during the pandemic, began a tutoring business, and even became an Assistant Scoutmaster for his local Boy Scout Troop. Currently, Nicholas is interested in neurology as well as pediatric, emergency, and internal medicine. He is also interested in education, community work, and research. Nick is partnered with Mountain Counseling and Training, a child therapy group in Crestline, California. There, he assists therapists and counselors by aiding Rim of the World High School students, advocating for their mental health, and providing a safe space to decompress and cope. Also, he was recently elected Preclerkship Assessment and Evaluation Committee Chair at CUSM to help improve students' test-taking experience. For fun, Nick loves studying psychology, playing video games, kickboxing, and playing music. He also enjoys hiking, being with family, and camping.
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Fadial, Tom

Tom Fadial, MD, is an emergency medicine physician at the VA Greater Los Angeles Healthcare System. His interface and interaction design background has supported his focus on creating educational tools for undergraduate- and graduate medical education, patient care, and on-shift medical education. Other interests are centered around meta-cognitive aspects of medical education and exploring the use of cognitive structures or algorithms in medical student and resident education. ddxof (<https://ddxof.com/>) contains over 100 clinical algorithms for diagnosing and managing various conditions encountered in the emergency department. These algorithms provide an explicit cognitive structure and facilitate rapid learning and teaching conducive to the fast-paced environment of the emergency department. tomfadial@gmail.com

Fagerstrom, Jessica

Jessica Fagerstrom is a board-certified therapy medical physicist through the American Board of Radiology and works as an Assistant Professor in the Radiation Oncology Department at the University of Washington. Her PhD in Medical Physics is from the University of Wisconsin, and her MEd in Curriculum and Instruction is from the University of Washington. jfagerst@uw.edu

Fakhouri, Savannah

Savannah Fakhouri is a second-year medical student at the University of California San Diego School of Medicine who encourages the use of art to heal through her work at the Ronald McDonald charity house, hosting craft nights for children with serious illnesses. She is currently a research associate working with Dr. George Hightower, Associate Professor of Dermatology and Pediatrics, to improve the patient experience. Savannah fosters her love of teaching and bridging the gap between disparities within surrounding communities as a tutor with San Diego Refugee Tutoring for three years, serving unhoused neighbors through Street Corner Care, and volunteering as a manager at the UCSD Student-Run Free Clinic. She has a strong passion for patient advocacy, as demonstrated through her work with the V-Strong Support Community in partnership with the Global Vitiligo Foundation, as a legislative advocate at Cal Derm's Advocacy Day, and advocating for patient needs to the FDA for patient-focused drug development for vitiligo. Savannah Fakhouri's previous clinical

research work centers on improving human health through various topics such as enhancing acne treatment tools, support groups for patients with chronic skin conditions, environmental impacts on skin conditions, time-restricted eating and circadian rhythms, treatments for chronic lymphocytic leukemia (CLL), and the relationship between sleep and psychological wellbeing.
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Fallas, Shelby

Shelby Fallas' professional career has focused on adult and higher education and student success. She is the Coordinator for the California Statewide Area Education Program and the Clerkship Coordinator for Family and Community Medicine at UCSF (University of California San Francisco) – Fresno. She has a passion for underserved student populations and student success. Shelby received her undergraduate degree in Psychology from the University of Oklahoma and began her career working and training in the top Athletic Academic facility in the country, the University of Oklahoma. Shortly after completing the training, she accepted a full-time offer as a Student Success and Admissions Counselor at Oklahoma City Community College, where she worked with the rural and underserved population of the greater Oklahoma City area, specifically those students who were undecided on an education pathway. Shelby relocated to California, where Shelby accepted a position at Fresno Pacific University as the Assistant Director of Outreach and Recruitment. She spearheaded a new virtual enrollment event during COVID-19, increased the team size from four to seven, and facilitated recruitment efforts for the greater Fresno area. During this time, Shelby completed her Master of Arts in Administrative Leadership from the University of Oklahoma, which prepared her for her role as Coordinator for the California Statewide Area Education Program. shelby.fallas@ucsf.edu

Favreau Haight, Michele

Since first being invited to participate in designing and delivering a new Pediatric Residency rotation, Michele Favreau, PhD, has continued to be involved in Medical Education across the spectrum of physician training. As a faculty member, Dr. Favreau has worked as an administrator, leader, researcher, instructor, and coach, partnering with my health sciences colleagues to advance the knowledge, skill sets, and wellbeing of the medical education community. Her overall goal has been to optimize individual and institutional learning outcomes and empower physicians and trainees to seek and achieve personal and professional excellence across their careers. Success has resulted from a collective effort to collaborate and innovate consistently. mah8@hawaii.edu

Felipe, Kimberly

Kimberly Felipe is a second-year medical student at Indiana University School of Medicine. She earned her Bachelor of Science in Biology from Indiana University Purdue University Indianapolis and a minor in Chemistry. During undergrad, Kimberly conducted clinical research with the Life-Health Sciences Internship Program and was a course coordinator for general and organic chemistry classes. To further gain clinical experience prior to medical school, she worked as a medical scribe in a dermatology clinic. Through that experience, she has been inspired to consider a career in dermatology. Kimberly is the president of a student-led pro-bono medical consulting student interest group and volunteers at Matthew 25, a free clinic in Fort Wayne, Indiana. kfelipe@iu.edu

Fenske, Julie

Julie Marie Fenske, MS CCP, is an adult and pediatric cardiovascular perfusionist at the University of Southern California. She completed her undergraduate education with honors at Dominican University in 2015 and graduated from Milwaukee School of Engineering's Master of Science in Perfusion program in 2017. At the University of Southern California, Julie has taken on various opportunities to expand her leadership experience, including as a student liaison and Children's Hospital of Los Angeles perfusion account manager. She has presented at the Cardiology and the American Academy of Cardiovascular Perfusion annual conferences (receiving the "Best Paper of the Conference" award by the AACP in 2018). Julie has also participated in research, medical illustration, and a cardiac mission trip. Recently, she has opted to pursue leadership in education by taking on the role of clinical coordinator for USC's new Master of Science in Perfusion Sciences. She is pursuing a second master's within USC's Master of Science in Academic Medicine program.
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Fliorent, Rebecca

Rebecca Fliorent is a third-year medical student at Rowan-Virtua School of Osteopathic Medicine. She is currently completing clinical rotations at CentraState Medical Center in New Jersey. She has had a passion for coalescing humanities and medicine throughout her education. In medical school she has taken an active role in public health, community service, and social justice. One of her most remarkable achievements is establishing an organization to improve access to dermatologic information for people in underserved areas called South Jersey Skin Talk (SJST). Her organization has provided valuable resources, raised awareness, and facilitated a greater understanding of dermatological health among marginalized populations. Rebecca is also a prolific researcher who has made substantial contributions to the field of dermatology, specifically focusing on racial disparities. Her publications have shed light on the inequalities that persist in dermatologic healthcare and offer innovative solutions to bridge these gaps. fliore92@rowan.edu

Frakes, Krista

Krista Frakes is a 3rd-year M.D. candidate at California University of Science and Medicine. She is a driven healthcare researcher with a passion for improving pediatric care and advancing medical knowledge. Over the years, she has contributed to various research projects and initiatives aimed at enhancing the quality of healthcare services for children. She looks forward to continuing to make meaningful contributions to the field. frakesk@cusm.org

Friedman, Ellen

Dr. Ellen M. Friedman is a Senior Associate Dean of Professionalism and the Director for the Center for Professionalism in Medicine at Baylor College of Medicine. Prior to this she served as the Chief of Service for the Department of Pediatric Otolaryngology at Texas Children's Hospital, holding the Bobby Alford Department Chair in Pediatric Otolaryngology at Baylor College of Medicine. She was the first woman to serve as the President of the ASPO, the 3rd woman to serve as President for the ABEA and served as President of the Medical Staff at Texas Children's Hospital. She completed her term as a Director of the American Board of Otolaryngology and continues as a representative for the Residency Review Appeals Committee. She has received many professional honors including the Arnold P. Gold Foundation Award for Humanism in Medicine, the Distinguished Surgeon Award from Texas Children's Hospital for her innovation in surgical excellence, research, and education and she was recognized as a Master Clinician for Excellence in Patient Care and received a Distinguished Faculty Award. Her work with the Center for Professionalism was awarded a Macy Foundation Presidential Grant to fund the creation of a video and associated curriculum to address empathy among physicians and health care workers and in 2020 and awarded the AOA Medical Society Professionalism Award. In 2021 Dr. Friedman was the recipient of the AMA Foundation Award for Leadership in Medical Ethics and Professionalism. ellenf@bcm.edu

Fung, Cha-Chi

Cha-Chi Fung received her PhD in Educational Psychology from USC Rossier School of Education in 2003. Her career in medical education started while working as a research assistant in the Department of Medical Education at the School of Medicine of USC from 1999-2003. After graduation, Dr. Fung worked as an assistant professor in the Department of Family Medicine at the David Geffen School of Medicine of UCLA for 7 years before going back to USC to be the Director of Research in Medical Education. She's currently one of the Vice-Chairs of the Department of Medical Education at Keck School of Medicine of USC and the Assistant Dean for Research and Scholarship in Medical Education at Keck School of Medicine of USC. She directs the research arm of their Master of Academic Medicine degree program and is also a faculty member in the AAMC Medical Education Research Certificate (MERC) program. At the national level, she's served as the Western regional representative of the AAMC Medical Education Scholarship Research and Evaluation (MESRE) Section and the Chair for the Western Group on Educational Affairs (WGEA). She's currently one of the co-chairs of the Research in Medical Education (RIME) Planning Committee at AAMC and the president of the Society of Directors of Research in Medical Education (SDRME). Dr. Fung's primary research interest is in student performance assessment. chachi.fung@med.usc.edu

Fung, Christine

Dr. Christine Fung is a chief resident at the University of California's Irvine Internal Medicine Residency program, where she recently completed her residency training. She is a previous graduate from The Ohio State University School of Medicine. After her chief residency year, she hopes to pursue hospital medicine in private or academic settings. cefung@hs.uci.edu

Galati, Aidan

Aidan Galati, BS, is a second-year medical student at the UC San Diego School of Medicine interested in streamlining clinical care and education and designing patient-centered initiatives. Aidan's passion for supporting equitable medical care has led her to thrive within free clinic frameworks. She has enjoyed serving as a manager for both the Doctors Without Walls Women's Street Clinic and UCSD's Student-Run Free Clinic in Dermatology. In 2020, she independently designed and implemented a free, multi-day COVID-19 vaccination clinic for undocumented patients in her hometown of Sacramento, CA. In addition, Aidan enjoys promoting the wellbeing of patients and their families through emotional support, volunteering, and designing tools for patient-focused care. Under Dr. George Hightower's mentorship, Aidan is working to develop clinical navigator tools that promote shared decision-making at UC San Diego Department of Dermatology and Rady Children's Hospital. Aidan's previous clinical research experience includes coordinating dermatology clinical trials with Integrative Skin Science and Research in Sacramento and conducting clinical and behavioral health research at the UC Davis Emergency Department and MIND Institute. Her undergraduate research focused on the intersection between women's health issues and neuroscience, culminating in her production of dual senior theses on behavioral neuroscience and journalistic writing. aagalati@health.ucsd.edu

Gandra, Neeti

A second-year medical student at Wayne State School of Medicine, Neeti Gandra, is passionate about volunteering, mentoring, and improving health care for marginalized communities. Neeti graduated from Vanderbilt University in 2022 with a BA in Neuroscience and Medicine, Health and Society. During this time, she worked as a research assistant with the Laboratory of Affective Sensory Research, looking at emotional and affective empathy in individuals with Autism. During her senior year, she also worked as a medical scribe, actively shadowing physicians and learning how to read labs and evaluate diagnoses. As a medical student now, Neeti serves as the President of the American Medical Women's Association, coordinating speaker events, creating volunteering opportunities, championing advocacy initiatives, and implementing student mentorship programs. As a team, the board is also working on a literature review of women focused on gender inequalities within different medical specialties. Neeti is also the President of the Disability, Health, and Advocacy Initiative, which promotes various volunteer opportunities with disability health, including Gigi's Playhouse, Friendship Circle, and the ARIE program. Moreover, Neeti actively mentors the Wayne State community by being a learning coach who helps students improve various clinically relevant skills. go3987@wayne.edu

Garabet, Razmig

Razmig Garabet is a third-year medical student at Drexel University College of Medicine. He graduated from UCLA with a Psychobiology degree in 2019. His commitment to service and medical education allowed him to become the president of the Community College Outreach organization, providing lectures and mentorship to premedical college students across the country. Over the last year, he was sponsored as an NIH Research Fellow, where he conducted neurocognitive research on people living with HIV. He has volunteered weekly at Prevention Point Philadelphia, assisting and advocating for socioeconomically disadvantaged individuals. Furthermore, he was a member of the Business of Healthcare Scholars Track, where he investigated factors leading to increased hospital costs during emergency department visits. His current research interests lie in rapidly evolving artificial intelligence and methods to incorporate that technology into medical education and clinical efficacy. rgarabet@gmail.com

Garcia, Viridiana

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Garvick, Sarah

PA Garvick is an Associate Professor at Wake Forest University School of Medicine, Department of PA Studies where she has been on faculty for the past ten years. She is the Associate Program Director with focus on assessment, distance learning, and mentorship. She has presented her educational research regionally, nationally, and internationally alongside a variety of interprofessional collaborators. sarah.garvick@wakehealth.edu

George, Bria

Bria George, PharmD (2016), is a Medical Student at Florida International University, Miami, FL, MD Expected (2021-Present). Her journey through healthcare has shaped her into the patient advocate and future physician that she aspires to become. Dr. George practiced as a pharmacist for five years prior to the start of medical school which she believes has greatly contributed to her ability to navigate the healthcare system and recognize areas of need within the communities that we serve. She was able to serve as a community pharmacist, counseling patients from all walks of life and assisting as an advocate in many ways such as helping patients find cheaper medication options, providing medication counseling and even serving as a primary point of contact for medical care. She is now a 3rd-year medical student who aspires to build a practice in an underserved area of Miami, FL. Dr. George has tailored her medical school activities to gain exposure that will lead to professional development in ways that will primarily impact communities of underserved populations. She has served on the FIU Chapter of the Student National Medical Association E-Board, worked on national committees, and began an initiative to promote medical student retention. She was Treasurer, Student National Medical Association 2022-23, and is a Medical Student Ambassador 2023 - Present. She has received the Rotary Club of Miami Thomas Brown McClelland Scholarship Award 2022, 2023. bgeor026@med.fiu.edu

Gerges, Monica

Monica Gerges is a second-year medical student at UCI School of Medicine. She completed her Bachelor's in Neurobiology at UCI. She is passionate about service in medicine, and she actively helps out at the CSOC student-run free clinic and serves as a peer tutor for 1st-year medical students. She is involved in geriatric community service as the internal Vice President of the hospice care interest group, coordinating volunteer dates and events with the Heavenly Home. Monica is actively involved in health disparity radiology research, where she aims to identify and address the unequal distribution of healthcare access and outcomes among different populations. She is interested in the use of technology and imaging modalities in medicine, and she is currently the President of the Radiology Interest Group as well as the vice president of outreach for the Ultrasound Interest Group, where she aims to foster the same passion for the field by providing shadowing opportunities, mentorship, and research exposure. She plans to pursue a career in Diagnostic Radiology after graduating from medical school. mfgerges@hs.uci.edu

Gili, Natalia

Dr Natalia Gili, MD, graduated from the University of Malta in 2020, where she obtained her medical degree. She is currently following a surgical training program, a Basic Specialist Trainee in Surgery, at Mater Dei Hospital in Malta. She is pursuing a Master's in Medical Education at the University of Warwick. Alongside her clinical work, she is actively involved in quality improvement projects and research to improve patient care in surgery and developing junior doctors' training curriculum. nataliagili77@gmail.com

Gill, Saran

Saran Gill is a third-year Medical Student reading at Imperial College London with a vested interest in research. He has had work published, and has presented at The UK's largest Heart Rhythm Congress, the Royal Society of Medicine and is presenting at the Association of Surgeons in Training (ASiT conference in March). He has run a 23-session lecture series for students at Imperial College London and is also running a CPD accredited national surgical teaching series for medical students across the UK. saran.gill21@imperial.ac.uk

Giordano, Carolyn

Dr. Giordano is the Associate Dean for Assessment and Evaluation and Associate Professor in Family, Community, and Preventative Medicine at Drexel College of Medicine. She has been the primary author or co-author of over a dozen articles in peer-reviewed journals in health and medical education and interprofessional education. Dr. Giordano is the author and co-author of two book chapters on assessment and data analytics. She is a distinguished Psychology fellow in the National Academy of Practice and fellow in the Association of Schools Advancing Health Professions, where she is a member of the interprofessional education subcommittee and has co-edited a special edition of the Journal of Allied Health dedicated to interprofessional education works. She has been invited to give testimony to HRSA on the impact of interprofessional education. She has received the distinguished paper award from the Association of Schools of Allied Health Professions and the James B. Erdmann, PhD Award for Excellence in Interprofessional Education and Collaborative Practice. Dr. Giordano received a bachelor's degree in psychology, with a minor in women's studies from Rowan University, where in 2015 she was named "Outstanding Alumni." She earned her master's degree in experimental psychology at Towson University and her doctorate in educational psychology at Temple University. cg975@drexel.edu

Golba, Elizabeth

Dr. Elizabeth Golba is an educator and healthcare professional. She earned her doctorate in leadership for organizations from the University of Dayton. Dr. Golba holds a master's degree in higher educational leadership from Northcentral University and a bachelor's degree in secondary education from the University of Dayton. She also completed her associate degree in respiratory care at Sinclair Community College. Dr. Golba is a professor at Kettering and serves as the Program Chair of Health Sciences. She teaches healthcare ethics and leadership. Her research interests include ethics, interdisciplinary healthcare learning, and improving student success through diversity practice. elizabeth.golba@kc.edu

Gorabi, Varesh

Varesh Gorabi is a second-year medical student at the University of Texas Medical Branch John Sealy School of Medicine in Galveston, Texas. She graduated from the University of Texas Rio Grande Valley in 2020 with a B.S. in Biomedical Sciences and minored in Criminal Justice. She is currently a Co-Director of the Humanities in Medicine Lecture Series Committee and is interested in the role and impact of humanities on healthcare advocacy and outcomes. Gorabi is considering the fields of neurology, gastroenterology, or geriatrics. vagorabi@utmb.edu

Gowda, Deepthiman

Dr. Deepthiman Gowda is a general internist and serves as the Assistant Dean for Medical Education and Lead for Narrative Medicine and Humanities at Kaiser Permanente Bernard J. Tyson School of Medicine (KPSOM). Prior to joining KPSOM, Dr. Gowda trained in internal medicine and narrative medicine at Columbia University and served on the faculty at Columbia University. Dr. Gowda currently serves on the Board of Directors for Columbia Narrative Medicine. Dr. Gowda's research has focused on the role of visual art and narrative medicine in medical education and the Core + Clusters approach to clinical skills training. He was a Macy Faculty Scholar and a member of the New York City Board of Health for eight years, and former National Co-Chair for the National Board of Medical Examiners Step 2 Clinical Skills Committee. Dr. Gowda received his BA in anthropology and biology and MD at UNC-Chapel Hill and a master's in public health from Harvard University. deepthiman.gowda@kp.org

Grachan, Jeremy

Jeremy Grachan, PhD, is an Assistant Professor of Medicine and teach human anatomy, histology, and embryology to medical, dental, physical therapy, and graduate students. In addition, he taught other anatomy educational sessions for middle school and high school students through various outreach programs and some of the summer programs hosted by my institution. Dr. Grachan also has had experience with developing and modifying anatomy curriculums, both for undergraduate anatomy courses and professional anatomy courses. His primary area of research focuses on anatomy education. For high schoolers and undergraduate students, he explores creative ways to teach the

content, such as through the inclusion of superheroes. For undergraduate medical curriculums, Dr. Grachan mentors medical students interested in exploring different pedagogical styles and adding a variety of tools to boost students retention and enjoyment of the content. jg1916@njms.rutgers.edu

Gray, Lisa

Dr. Lisa Gray is a cardiologist in Anchorage, Alaska, and have been in practice since 2004. She practices invasive/noninvasive cardiology and is a member of the Alaska Heart and Vascular Institute. In addition to her clinical practice, she is a preceptor for fourth-year medical students who take a cardiology elective. Lisa is an adjunct clinical assistant professor at Pacific Northwest University-College of Osteopathic Medicine. She also serves as program director for Providence Alaska Medical Center's cardiac rehabilitation program. She completed the Academic Medicine program at the Keck School of Medicine of USC in 2023. lgray157@gmail.com

Gregg, Arianna

Arianna Gregg is a second-year medical student at the University of Nevada, Reno School of Medicine. She graduated Summa Cum Laude from the University of Colorado in 2020 with a Degree in Biomedical Science. Afterward, she obtained a Master of Public Health and graduated with the highest GPA at the University of Nevada, Reno. Her current interests include medical education, physical medicine, and rehabilitation. In addition, she is involved in a mentoring and education project to understand the barriers that collegiate athletes face in the medical school application process. As Arianna was a student-athlete, she is passionate about bridging the gap between these students and medicine to provide evidence-based insight on better supporting collegiate athletes on their road to becoming physicians. ariannagregg@med.unr.edu

Grewal, Reetu

Dr. Reetu Grewal graduated from UMDNJ Robert Wood Johnson Medical School, completed her residency in family medicine at Spartanburg Regional Healthcare, and completed a hospice and palliative medicine fellowship at Mayo Clinic Florida. She is an Associate Professor and Family Medicine Clerkship Director at the University of Florida College of Medicine, Jacksonville. Dr. Grewal's research interests include telemedicine, HIV care, chronic pain, and improving educational experiences for medical students. reetu.grewal@jax.ufl.edu

Grospe, Vincent

Vincent Grospe is a second-year medical student at the University of California, San Francisco School of Medicine. In medical school, he has engaged in teaching, research, and clinical opportunities. He has led admissions recruitment initiatives and co-directed mentorship programs for underrepresented pre-medical students. He is also a 2023 Curriculum Ambassador Program fellow and partnered with faculty members, studying how diverse learners evaluate professionalism feedback. His clinical experiences have been focused on serving vulnerable patients at San Francisco General Hospital, Clinic by the Bay, and Chinese Hospital SF. From his experiences, he aims to promote inclusivity in medical education and is interested in general internal medicine. vincent.grospe@ucsf.edu

Guarina, Shannen

Shannen Guarina is a second-year medical student at the University of California, Irvine, School of Medicine (UCISOM). She completed a Bachelor of Science in Cellular and Molecular Biology at California State University, Northridge, in 2018. During her gap years, she worked as a medical assistant for an oculoplastics private practice and worked in a media and buffer production lab at Thermo Fisher. At UCISOM, she is the Vice President of Community Outreach for the Association of Women Surgeons, organizing volunteer events for underserved communities. She is also the Vice President of CC to MD/DO, which provides mentorship, MCAT tutoring, and application-building workshops for pre-med community college students. Shannen is actively involved in OBGYN research and basic science and otolaryngology research at the Beckman Laser Institute. sguarina@hs.uci.edu

Gudi, Mithil

Mithil Gudi is from Troy, Michigan. He attended Michigan State University for his undergraduate degree and studied Neuroscience and Sociology. He was involved in research in medical sociology

and student education. He started at Wayne State University School of Medicine in 2022 and is pursuing a dual MD/MBA degree. He is currently involved in student interest groups in Orthopaedics and Emergency Medicine, an outreach organization called Procedures for Future Physicians, and research based on Orthopedics and value-based care. He worked on this project as the “education coordinator” board member of the Wayne State School of Medicine Institute for Healthcare Innovation (IHI) student organization. He worked on this project with support from the other IHI members (Anne Patterson, Kendall Brothers, Sohini Pandit, and Cecilly Kelleher) and the faculty advisor Dr. Diane Levine. Mithil is expected to graduate from Wayne State University School of Medicine in June 2026 and is interested in exploring opportunities in Orthopedics and healthcare management. mithilgudi@wayne.edu

Guedes de Almeida, Mylena Maria

Mylena Guedes de Almeida is a final-year MD candidate at Universidade Federal de Minas Gerais School of Medicine. In 2020, as an undergraduate researcher, she conducted a project to investigate the role of feedback in undergraduate Pediatrics education. In addition to her medical education research background, Mylena collaborates with the Center for Innovation in Artificial Intelligence in Healthcare to promote Artificial Intelligence literacy. She is interested in medical innovation and value-based care advocacy. mylenamga2018@gmail.com

Guerrero, Jessie

Jessie Guerrero is a current PGY-3 family medicine resident at Adventist Health White Memorial. He received his medical degree from Charles R. Drew/UCLA Medical Education Program in Los Angeles, CA. He earned his Bachelor of Science in Psychobiology with a minor in Spanish from UCLA. Being a native-born Angelino, Jessie has always been passionate about helping marginalized populations and has been involved in various community service activities and research in medical school and residency. He participated in this national medical fellowship called the Primary Care Leadership Program, where he presented his quality improvement project from one of the largest Federally Qualified Health Centers in Boston at the Primary Care Health Symposium Conference. He mentored many organizations, including the National Hispanic Medical Association, Partnership 4 Progress, and Latino Medical Student Association. Jessie has engaged the community while studying medicine as an anatomy academy teacher and a student-run LA coach. He has been part of the wellbeing committee at AHWM and LMSA secretary. guerrej04@ah.org

Gunsalus, Kearney

Kearney Gunsalus is an Assistant Professor of Biochemistry and Molecular Biology at the Augusta University/University of Georgia Medical Partnership, where her primary teaching areas are biochemistry, cell biology, and nutrition. She is dedicated to helping medical students use basic science as a framework for clinical knowledge and decision-making. She is committed to using evidence-based practices to promote diversity, equity, and inclusion in the biomedical workforce. She was a fellow in the Tufts IRACDA postdoctoral training program at Tufts University, where, in addition to conducting research, she received training in evidence-based pedagogy. Dr. Gunsalus earned her Ph.D. in Cellular and Molecular Biology from the University of Wisconsin-Madison and her bachelor's degree in Biochemistry and French from Smith College. As a basic scientist, Dr. Gunsalus studied the interactions between cellular energy metabolism and transcriptional regulation of gene expression and their impact on human health and disease; she has investigated these questions in breast cancer cells and the fungal pathogens *Candida albicans* and *Candida auris*. Dr. Gunsalus' primary research interest is using evidence to improve medical education to train compassionate physicians to address health inequities. gunsalus@uga.edu

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Hagood, Ashley

Ashley M. Hagood has worked in Graduate Medical Education (GME) for five years. She is an Education Program Coordinator Manager at Mayo Clinic in Jacksonville, Florida, overseeing a team of fifteen medicine-specialty coordinators. Over her tenure, Ashley has detailed experience in working

with residency and fellowship programs, directly: Plastic Surgery, General Surgery, Chronic Pain Medicine, Adult Cardiothoracic Anesthesiology, Internal Medicine, Cardiovascular Diseases, Clinic Cardiac Electrophysiology, and Advanced Heart Failure and Transplant Cardiology. She also obtained the Certified–Training Administrators of Graduate Medical Education (C-TAGME) credential in July 2021. Ashley holds a Bachelor of Arts in Sociology and Anthropology from West Virginia University and an MBA in Healthcare Management from Salem University. She will begin a DBA in Organizational Leadership and Development from Capella University in January 2024. Professional development is extremely important to Ashley. She is actively involved as an Instructor in Medical Education, a Well-Being Champion for GME, a member of the Influence, Inspiration, and Growth (IIG) professional development group, a member of the African Descendants (AD) group, an NAHSE member, an ACHE member, and an Accreditation Council for Graduate Medical Education (ACGME) DEI member. In her free time, Ashley volunteers with various organizations throughout the community. hagood.ashley@mayo.edu

Haight, Michael

Dr. Haight is currently the Senior Medical Director at the not for profit health plan, AlohaCare in Hawaii. He is also actively practicing and teaching as a Clinical Professor at the University of California San Francisco. Dr. Haight has participated in the accreditation of over 70 hospitals as a physician surveyor for the Joint Commission. He has broad experience in clinical operations, patient safety and quality, population health, coaching, clinical research, and health systems science. He completed an administrative residency with the California Medical Association and subsequently received a master's degree in Health Administration (MHA) from the University of Southern California. In addition, he has received credentials in Health Care Economics, Coaching and Health System Science. He has received multiple teaching awards from Children's Hospital Los Angeles/USC, UC Davis, and UCSF. Dr. Haight enjoys hiking, fishing, rowing, exploring native American rock art, and spending time with his family. mahaight8@gmail.com

Hallowell, Ronan

Dr. Hallowell is an assistant professor of Clinical Medical Education at USC's Keck School of Medicine. He is Co-Director of the Health Justice and Systems of Care course in the Keck MD program. Dr. Hallowell is a faculty affiliate at the Gehr Family Center for Health Systems Science and Innovation where he co-teaches the Introduction to Health Policy course for second year MD students in the Professionalism and the Practice of Medicine Program. He serves as an associate director of the USC Center for Mindfulness Science which is a collaborative hub for interdisciplinary research and innovation in the practice of mindfulness. Dr. Hallowell is also a founding faculty member of the new M.S. degree program in Narrative Medicine teaching research methods. He conducts research on curriculum design, the medical humanities and cross-cultural perspectives on medicine. He holds an EdD in Educational Psychology from USC, a MA in Philosophy and Religion from the California Institute of Integral Studies and a BA in Economics from Boston College. hallowell@usc.edu

Han, Feifei

Feifei Han, PhD, is a Senior Research Fellow at the Institute for Learning Sciences & Teacher Education, Australian Catholic University. She obtained her PhD from The University of Sydney. Dr. Han researches students' learning experiences in different learning modes and designs, such as online learning, blended learning, flipped classrooms, and computer-supported collaborative learning by combining theory-driven and data-driven approaches. She has over 100 peer-reviewed publications, including a single-authored book, 28 book chapters, 67 journal articles, 21 conference proceedings, and three research reports. Her publications appear in educational journals with high impact factors, such as *Computers and Education*, *The Internet and Higher Education*, *Studies in Higher Education*, *Advances in Health Sciences Education*, and *Advances in Physiology Education*. Her publications have attracted more than 1,850 citations from researchers internationally. Recently, in a bibliometric analysis of studies in blended learning from 2013-2022 – Detecting and visualizing research trends of blended learning: A bibliometric analysis of studies from 2013-2022, she is among the top four most prolific researchers in blended learning and the third place of the authors with the strongest citations. Of the three authors with the strongest citations, the bibliometric analysis further

shows that "More recently (2020-2022), it was Feifei Han whose research was cited often".
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Hanna, Karim

Dr. Karim Hanna describes himself as a husband and father, blessed to be a physician - specializing in Family Medicine and Clinical Informatics. He sees patients of all ages, from cradle to grave, both outpatient (clinic) and inpatient (hospital) in Tampa, Florida. Since graduating from medical school, Dr. Hanna has expanded his role to become a physician-educator. He has worked with medical students at all levels, from small-group teaching to co-directing pre-clinical and clinical courses. For more formal training, he completed the UNC Faculty Development Fellowship and the STFM Emerging Leaders Fellowship. He was awarded the STFM's New Faculty Scholar Award and began work in course and curricular design, building our Family Medicine transition to residency course and others. He now continues to serve on the medical school's curriculum committee. Recently, Dr. Hanna has taken on the role of Founding Program Director. As he shifts into graduate medical education, he is excited to help build a new Family Medicine Residency program at Tampa General Hospital.
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Hanna, Mena

Dr. Mena Hanna was born and raised in California and is a first year family medicine resident at Chino Valley Medical Center. Dr. Hanna has been interested in the field of obstetrics but more recently has grown a liking to developing apps and coming up with new ideas to improve healthcare. Dr. Hanna hopes to create new ways to streamline paperwork and care for physicians, office staff, and patients alike.

Hanna, Rana

I was born in Egypt but raised in Tampa Bay and have been blessed to attend medical school at the University of South Florida. I have a passion for service work and international medicine; I aim to impact those in my community and abroad by volunteering with free clinics and service trips.
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Harrington, Jane

Dr. Jane Harrington is a passionate biomedical educator who aims to innovate new modalities to engage current and future students in the world of microbes and immunity. She transitioned from bench research training with PhD at the University of Massachusetts Medical and a postdoctoral fellowship at the University of California, San Diego, to teaching medical school in the Caribbean for 11 years. Dr. Harrington recently started a new position as Course Director at Montana College of Medicine to apply and integrate novel digital media resources to adapt to the post-pandemic academic landscape. janeharrington1@gmail.com

Harris, David

Dr. David Harris, Ph.D. is an Associate Professor of Physiology at the University of Central Florida College of Medicine. david.harris2@ucf.edu

Hazenberg, Emma

Emma Hazenberg is a third-year medical student at the Medical College of Georgia from Roswell, GA. She attended the Georgia Institute of Technology, where she majored in Spanish and Biology. In medical school, she served as one of the directors for Clinica Latina, a free clinic providing care to underinsured and uninsured people in the Latin-X community. She is pursuing a career in surgery.
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Heck, Amber

Dr. Amber Heck is a biomedical sciences educator who specializes in active learning and curriculum development in health professions education. She has over a decade of experience in medical education, research, and faculty development. Early in her career, she discovered her interest in curriculum design and development. She went on to serve as founding faculty within two new medical schools, contributing to the development of innovative, flipped classroom, active learning curricula.

Throughout her career, Dr. Heck has focused her efforts on creating novel interventions to promote learner readiness and success in health professions education. She has developed a wide variety of learning experiences that support the development of strong foundational knowledge, higher-order thinking, and the non-cognitive skills necessary for learners to succeed in advanced education and professional roles. As an expert active learning facilitator, she is skilled in a broad array of instructional methods and modalities, including team-based learning, case-based learning, and problem-based learning. Dr. Heck is active within the health professions education community, and contributes to scholarship, faculty development, and peer mentorship, internationally. In 2016, she became a Fellow of the International Association of Medical Science Educators (IAMSE), and in 2020 was awarded the IAMSE Early Career Award for Excellence in Teaching and Innovation. Through her involvement in the community, she aims to create faculty development opportunities where participants develop tangible, evidence-based solutions to challenges imposed by modern education practices. amber.heck@unthsc.edu

Hegde, Saloni

Dr. Saloni Hegde is a pediatric resident at Children's Hospital Los Angeles. During her undergraduate career at the University of California, Los Angeles, Dr. Hegde participated in student life as a resident assistant and tutoring for undergraduate courses. She volunteered at afterschool programs for elementary school children, teaching health-related topics in creative ways. Dr. Hegde continued volunteering at afterschool programs while in medical school at the University of Toledo College of Medicine, where she received her medical degree. During her medical school career, Dr. Hegde continued tutoring and teaching the health benefits of food through cooking classes. As a pediatric resident, this is her first pursuit in formal medical education; however, through her clinical experience, she is interested in graduate medical education involving methods of communication between providers and their patients. shegde@chla.usc.edu

Heilmann, Adam

Dr. Adam Heilmann is an MD, Emergency Medicine physician, and Medical Education Fellow at Washington University in St. Louis. He is one of three medical education fellows in a two-year track. In addition to obtaining the MACM degree, they manage the resident educational curriculum and engage in didactic, simulation, and procedural teaching. Dr. Heilmann also works clinically with residents in an urban emergency department in St. Louis and at multiple other clinical sites across the city/county, including St. Louis Children's Hospital. Dr. Heilmann's primary educational interests are innovation and engagement and finding and utilizing new teaching techniques to incorporate into resident curriculums. He aims to engage residents in active learning despite their huge workload and exhaustion. He has used novel simulation sessions and gamification as ways to get residents out of the classroom. Dr. Heilmann's partner is a social worker at Barnes Jewish Hospital, and they have been together for 11 years. They are avid music lovers. Dr. Heilmann usually plays video/board games or bakes bread in his free time and hosts DnD (dungeons and dragons) sessions. a.d.heilman@wustl.edu

Hekmati, Tara

Tara Hekmati is originally from Los Angeles, California. She is a third-year medical student at Wayne State University School of Medicine (SOM) in Detroit, Michigan. She is passionate about researching mind-body interconnectivity and the effect of wellness on physical and mental health outcomes. In particular, since beginning her medical career as a physician-in-training, Tara has been interested in research and projects that advocate for promoting learner and faculty wellness. From early in her academic career, Tara has immersed herself in scientific exploration through clinical research. She previously worked at the Institute for Myeloma & Bone Cancer Research (IMBCR) and has helped publish several research articles on Multiple Myeloma. Tara is also an active member of community service organizations like the Fresh Prescription and Phone Pals Programs at Wayne State SOM. She hopes to combine her passion for clinical research in health and wellness with community service to help overcome social barriers to health in the Detroit and Los Angeles communities. tarahekmati@wayne.edu

Hernandez, Adriana

Adriana Hernandez, MD, is the faculty advisor for Allison Yu's submission titled "Impostor Phenomenon and Clinical Competency in Pediatric Residents." As the Associate Program Director of Children's Hospital Los Angeles's pediatric residency program, Dr. Hernandez has developed orientation and conference curricula, streamlined resident IPASS handoffs, facilitated hospitalist and resident communication, and improved family-centered rounds. When Dr. Hernandez was a resident at CHLA, she was a member of the CHLA Education Track and afterward became a chief resident of the residency program. Dr. Hernandez is now an assistant professor at USC Keck School of Medicine and the Division of Hospital Medicine. She is also a faculty mentor for the CHLA Education Track and the Diversity and Inclusion Committee. Dr. Hernandez is continuing her medical education scholarship with USC's Master of Academic Medicine program, which she started in 2020 and will graduate from in 2024. adrihernandez@chla.usc.edu

Hernandez, Veronica

Veronica Hernandez is a second-year medical student at the UTMB John Sealy School of Medicine in Galveston, Texas. A native Texan, Hernandez is from the San Antonio area and attended Texas Tech University. She graduated with a BS in Microbiology with Honors and minors in Spanish and Chemistry in May 2022. She currently serves as Co-Director for the Humanities in Medicine Lecture Series. Her interests include the impact of humanities education on clinical training, Latino/Hispanic mental health, and rural healthcare. Her long-term goal is to become a community psychiatrist. velherna@utmb.edu

Hershey, Maxwell

Maxwell Hershey is a fourth-year medical student at the Medical College of Wisconsin applying to a residency in radiology. He has experience in medical research in fields including immunology and orthopedic surgery but also has an interest in medical education. Maxwell has served as a co-coordinator with the Teaching Test Kitchen project at MCW. He aspires to be a radiologist at an institution where he can continue to involve himself in medical education. mhershey@mcw.edu

Hicks, Samantha

Samantha Hicks is a third-year medical student at the Charles E. Schmidt College of Medicine at Florida Atlantic University. She attended Florida State University in Tallahassee, Florida, receiving her bachelor's degree in Biology and Psychology. After college, she accepted an AmeriCorps position in Alamosa, Colorado, where she worked with kindergarten students in a Title 1 program. Samantha is driven by a desire to reduce health inequities and is passionate about preventative and holistic care. In medical school, Samantha is active within the Caridad Student Free Clinic Initiative and leads her community's Family Medicine Interest Group. She holds a certificate in Integrative Medicine from Jefferson University. Outside of school, Samantha enjoys gardening, camping, and rollerblading. hickss2021@health.fau.edu

Hightower, George

Dr. George Hightower, MD, PhD, is a pediatric dermatologist and associate professor of dermatology and pediatrics at UC San Diego School of Medicine. Dr. Hightower is also the director of the Ethics Center for Science and Technology. Dr. Hightower has been a panelist and participant at the Fair Housing for Our Future Conference, hosted by the Fair Housing Council of San Diego, for the past three years. His past interdisciplinary collaborations include work with Maraya Performing Arts Centers, an inclusive art center that focuses on bringing together people from all walks of life to experience the healing and transformational power of the arts. Dr. Hightower is internationally recognized as a clinical expert in hidradenitis suppurativa. His clinical interests include chronic skin conditions in adolescents, and his work focuses on the transition from pediatric to adult care. ghightower@health.ucsd.edu

Hiner, Julia

Dr. Julia Hiner is an academic physician and assistant professor at University of Texas Health Science Center McGovern Medical School in Houston, Texas. She is board-certified in Internal Medicine and Geriatric Medicine. Dr. Hiner's serves as the Geriatric Medicine Fellowship Program

Director and course director for the Geriatric Medicine fellows' Elder Capacity Assessment and Mistreatment rotation. She conducts capacity assessments and elder mistreatment case reviews as a consultant for the Texas Forensic Assessment Center Network (FACN), and as the physician medical director for the Harris County's Senior Justice Assessment Center (SJAC). She is involved in professional societies and committees including the American Geriatrics Society (serving as co-chair of the Elder Abuse Special Interest Group), the Texas Geriatrics Society (serving as the President-elect and a member of the Board of Directors), the Institute on Aging, the Texas Elder Abuse and Mistreatment (TEAM) Institute, and the Elder Fatality Review Team (EFFORT) Committee. Additionally, Dr. Hiner was selected by Governor Greg Abbott to serve a four-year appointment to the ten member Texas Managed Correctional Health Care Committee. She is passionate about teaching on topics related to Geriatric Medicine, adult mistreatment, decisional capacity assessment, incapacity/incompetency, and guardianship. She completed UTHHealth's Health Educator Fellowship Program to further her knowledge and skills as a medical educator. julia.a.hiner@uth.tmc.edu

Hollon, McKenzie

Dr. McKenzie Hollon is an associate professor and cardiothoracic anesthesiologist at Emory University. Dr. Hollon graduated from Auburn University with a degree in industrial systems engineering and with her MD from LSU SOM in New Orleans, LA. She completed her residency training in anesthesiology and a fellowship in adult cardiothoracic anesthesiology at Emory University in Atlanta, GA. Her clinical and research interests are in the field of echocardiography and point of care ultrasound. She holds 3 board certifications from the national board of echocardiography and has made significant contributions to the education of anesthesiologists in this field through teaching and leadership roles at the national level and as well as scholarship including journal articles and text book chapters. As Vice Chair of Education for the dept of anesthesiology, Dr. Hollon is leading the transformation towards a competency based medical education model for the residency, and is focusing on implementing and improving assessment and feedback processes. She co-leads a multi-institution consortium, TARGET, the anesthesia research group for technology in education, who's current project is the development of precision education tools for anesthesiology training. To further develop her skills in the education arena, Dr. Hollon is currently pursuing her master's in education for health professions from Johns Hopkins University. mmayo2@emory.edu

Hopkins, Akshata

Dr. Hopkins graduated from the seven-year combined program at the University of Florida College of Medicine. She completed her general pediatrics residency and served as chief resident at the University of Florida Health Jacksonville. Dr. Hopkins spent four years on the faculty of the University of Florida Jacksonville and practiced as a pediatric hospitalist at Wolfson Children's Hospital. She joined Johns Hopkins All Children's Hospital as a core clinical educator alongside the institution's inaugural class of pediatric interns. In 2016, she was appointed assistant program director and ultimately stepped into the role of JHACH pediatric residency program director in 2018. Dr. Hopkins has been board-certified in general pediatrics since 2010. In 2022, Dr. Hopkins became board-certified in pediatric hospital medicine through the clinical practice pathway. As a graduate medical education leader, Dr. Hopkins is committed to training the next generation of pediatric clinicians and leaders to lead with intent, purpose, curiosity, and compassion. She empowers pediatric residents to lead with curiosity and nurture a healthy growth mindset. When Dr. Hopkins stepped into the role of residency program director in 2018, she redesigned the LEAD PACCTM program to build a foundation for career-long professional development and growth of adaptive expertise. ahopki16@jhmi.edu

Hosseinzadeh, Shahriar

Dr. Shahriar Hosseinzadeh, a seasoned and esteemed Paediatrician, boasts over two decades of experience in the medical field across diverse care settings in Tehran, Iran. His professional journey includes certification as a Genetic Preventive Counselor, and his primary passions encompass genetics and pediatric cardiology. Dr. Shahriar has authored numerous articles on these subjects, showcasing his expertise. In addition to his clinical pursuits, Dr. Shahriar is a dedicated volunteer at the Centre of Excellence for Simulation Education and Innovation (CESEI) since 2017. He firmly believes that innovation and technology play pivotal roles in advancing the realm of medical

education. It is a distinct honor for him to serve as the Medical Team Leader for the groundbreaking Cyberpatient Project, where his commitment to enriching the learning experience shines through.

Hotzman, Jennifer

Dr. Jennifer L. Hotzman completed her PhD in Biological Anthropology at the University of Florida, followed by a post-doctorate position at Duke University focused on teaching first-year medical students. She then became a faculty member at William Carey University College of Osteopathic Medicine, where she taught for seven years before transitioning to her current role as an Associate Professor of Anatomy at Idaho College of Osteopathic Medicine in 2019. Dr. Hotzman is interested in working toward a more diverse and equitable undergraduate medical education experience for students, faculty, and staff. jhotzman@icom.edu

Humphrey, Holly J.

Holly J. Humphrey, MD, MACP, became the eighth president of the Josiah Macy Jr. Foundation in July 2018. Previously, she served for 15 years as the Ralph W. Gerard Professor in Medicine and Dean for Medical Education at The University of Chicago. Dr. Humphrey earned her MD degree with honors from The University of Chicago and as a member of Alpha Omega Alpha honor society. Following an internal medicine residency, pulmonary and critical care fellowship, and Chief Residency, all in the department of medicine at The University of Chicago, she served for 14 years as Director of the Internal Medicine Residency Program, which provided the foundation for her medical education career. Her signature programs in medical education have focused on diversity and inclusion, mentoring, and professional identity formation. She is an elected member of the National Academy of Medicine, a Master of the American College of Physicians, and a Fellow of the Royal College of Physicians (London). Crain's Chicago Business featured her as one of their "Women to Watch," and Modern Healthcare celebrated her as their Excellence in Governance honoree for work as an outstanding healthcare board member. The NorthShore University HealthSystem created the Holly J. Humphrey Medical Education Fund with a one-million-dollar gift to The University of Chicago. Her teaching honors include selection as a favorite faculty teacher by graduating University of Chicago Pritzker School of Medicine students more than 25 times. humphrey@macyfoundation.org

Hunt-Smith, Taryn

Taryn Hunt-Smith is a second-year medical student at the Spencer Fox Eccles School of Medicine at the University of Utah. She grew up in Anchorage, Alaska, then moved to New Hampshire to complete her undergraduate education at Dartmouth College, where she studied Earth Sciences and Global Health. Taryn is passionate about underserved care and global health. She is a member of the University of Utah's Tribal, Rural, Underserved Medicine and Global Health Program and directs one of the local student-run free clinics. Taryn is also passionate about sustainability in medicine and co-authored the Planetary Health Report Card last year, a metric-based tool used by health professional schools worldwide to improve climate change integration into the core curriculum. Through her research in Emergency Medicine/Critical Care, she studies hemorrhagic shock and cardiac arrest. As a co-leader of the Emergency Medicine (EM) Interest Group, she has been working with her fellow EM Interest Group Leaders, EM Residency Program Leadership, and EM Fellowship Directors to establish a certificate program to prepare medical students for EM residency and beyond. taryn.hunt-smith@hsc.utah.edu

Itani, Reem

Reem Itani is a 3rd year pulmonology fellow at Children's Hospital Los Angeles, with clinical interests in Congenital Central Hypoventilation Syndrome and ventilator support in children with medical complexity and is in her final year of the Masters in Academic Medicine program. She previously worked as a pediatric hospitalist at CHLA and completed her residency, including a chief year, at University of Chicago. Her medical education interests include effective mentorship and creating a sphere of wellness that supports education and scholarly work for both trainees and faculty alike. Her other interests include baking, improv comedy, and hiking. She has matched at Stanford University for an additional 1-year Sleep Fellowship, which will start in July 2024. ritani@chla.usc.edu

Ivasenko, Anzhelika

Anzhelika Ivasenko, MD, Ph.D., I earned my MD in 1994 (Lugansk, Ukraine) and Ph.D. in 1998 (Kharkiv, Ukraine). My academic experience spans over 25 years and includes appointments as the Associate Dean of Basic Sciences and Associate Dean of Academic Affairs in Ukrainian and one of the Caribbean medical schools. Her research interests are combined trauma and medical education. I am the author and co-author of over 40 scientific articles and three patents. I have a passion for teaching, and my current research interests in the educational area are the methods of teaching and evaluating soft skills in the medical curriculum, developing materials for active learning, dealing with misconceptions in Renal and Pulmonary Physiology, and narrative medicine. anzhelikaivasenko@upike.edu

Jacobs, Nicole

Nicole Jacobs is a 3rd-year M.D. candidate at California University of Science and Medicine. Her research interests include improving access to care for pediatric patients and promoting longitudinal physician-patient relationships. She hopes to continue this passion to provide equitable care for all patient populations as a future physician. nicolejacobs@g.ucla.edu

Jacobsohn, Kenneth

Dr. Kenneth Jacobsohn is a professor of Urology at the Medical College of Wisconsin (MCW). He is fellowship-trained in minimally invasive urologic oncology and board-certified in urology. His clinical work focuses on robotic surgery for benign and malignant urologic diseases. Additionally, he is a proponent of the benefits of healthy living and brings this to every patient encounter. In 2019, he became board-certified in Lifestyle Medicine and is the founding director of Lifestyle Medicine at MCW. kjacobsohn@mcw.edu

Jain, Seema

Dr. Jain received her medical degree from The Ohio State University College of Medicine and completed her internal medicine residency training at University of Pittsburgh. She also received a master's in public health degree from UT Health School of Public Health while completing her General Internal Medicine Fellowship at UT Southwestern Medical Center. She has expertise in curricular design and evaluation as well as experience working in interprofessional groups and with members of community-based organizations to advance work in health equity and social determinants of health. In her first year as faculty and Associate Program Director at HonorHealth in Phoenix/Scottsdale, AZ, she developed a series of didactics on core DEI topics for the IM residency program, covering microaggressions, implicit bias, and social determinants of health. This has laid the foundation for DEI curricula planned for the 2023-24 academic year, including the Indigenous Health curriculum described in this submission. sejain@honorhealth.com

Jaramillo, Gwendolyn

Gwendolyn Maly Jaramillo is a third-year medical student at the University of New Mexico pursuing a combined MD/MPH degree. In 2021, she graduated from the University of New Mexico with a BS in Biology, a BS in Psychology, and minors in Chemistry and Honors College. Gwendolyn is passionate about medical student wellbeing. She serves as an elected member of her university's Student Wellbeing Advisory Council, where she partners with faculty and peers to advocate for medical student wellness. Gwendolyn created and led a Positive Psychology elective for first-year medical students to enhance resilience and self-efficacy. She also led a Mindfulness for Medical Students elective for medical, PA, and pharmacy students to promote personal wellbeing through heightened self-awareness. She aspires to become a pediatrician. gmaly@salud.unm.edu

Jarratt Barnham, Isaac

Isaac Jarratt Barnham received an undergraduate BA in Philosophy and Psychology from the University of Cambridge and an MPhil in mental health research. He then held research posts within the Psychiatry departments of both the University of Cambridge and University College London before accepting a place to study Medicine at the University of Oxford. While at Oxford, he has published widely in areas including Psychiatry, Hand Surgery, and General Surgery, receiving several national prizes for his work. He also holds significant teaching responsibilities within the university, including as

a College Tutor at St Catherine's College and a Teaching Fellow in Ethics and Law within the Department of Population Health. He has won multiple awards for his university teaching and recently became an Associate Fellow of the Higher Education Association. After graduating later this year, he will take up a prestigious Academic Foundation post at the University of Oxford. icjb1@hotmail.co.uk

Javidi, Daryoush

Daryoush Javidi, MD, CHSE, Associate Professor of Medical Education, Department of Medical Education, California University of Science and Medicine (CUSM) since 2018. He retired as an Associate Professor of Cardiac Surgery from Tehran University in 2010 and has been practicing cardiac surgery for 32 years before joining the CUSM. Daryoush has a great interest in Simulation as an important part of the medical education for students and residents. He got his Certification as "Certified Healthcare Simulation Educator" in 2021. Daryoush is director of the Clinical Skills and Simulation and program director of Clinical Skills for first year medical students. He runs the simulation programs for the third- and fourth-year medical students and in is involved in residency hands on clinical training procedures. At CUSM, he is also teaching at both clinical cases sessions and College Colloquium. Daryoush is a member of the following committees: 1. Chair of Assessment & Evaluation 2. Vice-Chair Curriculum 3. Rank & Promotion 4. Pre-clerkship. His hobbies are daily exercise and walk and watching movies with psychosocial and science fiction themes, mostly as a part of family time. Very interested to music as a means for relaxation and concentration. Currently Daryoush is studying Master of Academic Medicine (MACM) at USC. daryoush.javidi@gmail.com

Jim, Catarina

An aspiring academic physician, Catarina Jim is a current medical student at Florida International University's Herbert Wertheim College of Medicine (HWCOM). She graduated from Florida International University with her bachelor's degree in psychology in 2019 and served her South Florida community as a teacher for two years before beginning medical school. Catarina is currently involved in several research projects at HWCOM that aim to improve medical education through active learning techniques such as flipped classrooms and simulation-based learning. Catarina also actively participates in initiatives to improve undergraduate medical education, such as incorporating trauma-informed care within the clinical skills curriculum. cvale064@fiu.edu

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Priyanka Kale is a fourth-year medical student at Wayne State University School of Medicine in Detroit, Michigan. She is on an educational leave and pursuing her masters in public health in health and social behavior at Harvard T.H. Chan School of Public Health. Priyanka is passionate about student education, quality improvement, mental health, and women's health. In her free time, she creates digital artwork for her organization, VulnerabilityandMore, and disseminates the pieces to local Detroit hospitals. priyankakale@hsph.harvard.edu

Kalynych EdD, Colleen

Colleen Kalynych, EdD, is currently Assistant Dean for Medical Education at the University of Florida College of Medicine-Jacksonville (UFCOM-J), Director of Educational Development and Research in the Office of Educational Affairs, Director of the Center for Medical Education Research and Scholarship and a Senior Lecturer in the Department of Emergency Medicine. Her areas of expertise include medical education, faculty development, and clinical and medical education research and scholarship. She has published extensively in the areas of clinical and medical education research and has presented her work internationally, nationally and regionally. She is a member of the University of Florida Teaching Scholars and oversees UFCOM-J's faculty development program. Further, Dr. Kalynych has presented workshops at the Pediatric Academic Society, published in JGME regarding innovations in teaching, MedEdPORTAL and presented a poster at last year's ACGME conference regarding Tuesday's Teaching Tips (TTT). Dr. Kalynych's innovative strategy has led to three different TTT programs, focusing on evaluation and feedback, teaching under time constraints and promoting resilience and has published in the area of simulation regarding clinical teaching for dental injuries and team-based trainings for resuscitations. Her unique skill set brings instructional design techniques to presentations and instructional material.
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Kankanamge, Denuka

Denuka Kankanamge is a postgraduate MD student at the Faculty of Medicine Health and Human Sciences at Macquarie University Sydney, Australia. His undergraduate university degree is in biomedical science at Monash University Australia. He is an MD Research worker using Artificial Intelligence in Surgery with his team members, including co-presenter Zehurn Ong, an MD student at Macquarie University. Zehurn's undergraduate degree is in Medical Science from the University of Sydney. Together with A/Prof Preda, Professor Wilson, and the team at SXR, Denuka and Zehurn have been working to integrate AI in surgical teaching to improve learning. Macquarie University is a leader in AI, working with the Australian SXR team in the proceduralist space nationally and internationally. denuka.kankanamge@students.mq.edu.au

Karunakaran, Rohini

Dr Rohini Karunakaran is currently working as Senior Associate Professor at Faculty of Medicine, AIMST University, Malaysia. Dr Rohini is the Deputy Dean Academic and International Affairs, and Coordinator of Medical Education Unit, and Internal Auditor, AIMST University, with administrative responsibilities besides teaching. She holds a PhD in Biochemistry. She holds master's in clinical microbiology, B.Ed, MBA (Educational Management) & M.Phil. Dr Rohini has completed her Essential Skills in Medical Education Leadership-ESME Lead, AMEE, PG Diploma in Medical Education (Dundee, UK) and has been awarded the Associate Fellow of AMEE (AFAMEE). She is a certified QMS & IA ISO Internal Auditor for ISO 15189:2012 and ISO 9001:2008 and ISO Risk Committee Coordinator. She has more than 22 years of teaching and research experience and has guided UG, PG and PhD students. She has been the examiner for several PG & PhD students. She is the winner of various international awards and winner of the YSP fellowship programme in Seoul, Korea. She is editorial board member of many international journals and has reviewed more than 150 articles. She has presented oral papers and posters at international conferences in India, Malaysia, Singapore, Thailand, Hongkong and Srilanka and invited speakers and Resource persons for various international conferences and associated as member in several international reputed educational societies/communities. rohinik23@gmail.com

Kathirgamanathan, Kala

Kala Kathirgamanathan MD, MACM, FRCPC is a board-certified cardiologist with subspecialty fellowship training in advanced heart failure, mechanical circulatory support and heart transplantation. She completed her internal medicine and cardiology training at Western University in Ontario and completed her subspecialty fellowship training at the University of Toronto. Throughout her training, she was chief cardiology resident. She enjoys writing, has several publications in medical journals and authored the book chapter "Acute Coronary Syndromes" in the Handbook of ICU Therapy, 3rd edition. She currently has a community based cardiology practice. kalakathir@gmail.com

Kattih, Mafaz

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Kayalackakom, Tarron

Dr. Tarron Kayalackakom began his higher education at the University of California, Irvine by pursuing a degree in Biomedical Engineering. Following this, he transferred to The American University of Antigua where he completed his basic sciences and obtained his MD degree. Shortly thereafter he completed a research fellowship at the University of York in the United Kingdom on the subject of managing diabetes in the setting of severe mental illness. In 2019 he began teaching as a graduate teaching fellow while pursuing a master's in health professions education (MHPE) His research interests include large language models in education, the growth mindset, the role of social media in creating and reinforcing academic outcomes, machine learning in the context of optimizing educational content delivery and curricular design, aphantasia in the context of higher education and the impact of the subjective elements of human perception on learning and memory formation. Dr. Tarron Kayalackakom currently works as an Instructor in the Educational Enhancement Department where he facilitates small group activities, provides academic support to students via one on one advising and pursues his research interests. tkayalackakom@auamed.net

Kelleher, Cecilly

Cecilly Kelleher is from Canton, Ohio. She attended The Ohio State University from 2017-2021 and earned her undergraduate degree in Health Sciences with a minor in Spanish. She was involved with quality improvement projects at Akron Children's Hospital, creating benchmarking data for quality improvement in various departments in 2018. She started at Wayne State University School of Medicine in 2021. She is currently involved in the Institute for Healthcare Improvement, Robert R. Frank Student Run Free Clinic, and research in Ophthalmology. She has experience with quality improvement research within Ophthalmology, evaluating the efficacy of a hospital reminder system and access to transportation in relation to clinic no-show data. She worked on this project as the Quality Improvement Project Manager of the Wayne State School of Medicine Institute for Healthcare Innovation (IHI) student organization. She worked on this project with support from the other IHI members (Anne Patterson, Kendall Brothers, Sohini Pandit, and Mithil Gudi) and the faculty advisor Dr. Diane Levine. Cecilly Kelleher is expected to graduate from Wayne State University School of Medicine in June 2025 and is interested in exploring opportunities in Ophthalmology, quality improvement, and patient safety. hj2214@wayne.edu

Kessler, Lori

Lori Kessler, Pharm D, is the Senior Director of the Office of Medical Education and Academic Affairs at Methodist Le Bonheur Healthcare. She serves as the ACGME institutional and Internal Medicine residency coordinator. Her career has focused on patient safety and quality, with an early focus on oncology medication safety. Her interest as a Graduate Medical Education leadership team member includes the promotion of a programmatic feedback culture, GME alignment with patient safety, and designing and evaluating resident as teacher curriculum goals, objectives, and outcomes. lori.kessler@mlh.org

Kim, Grace

Grace is a current third-year medical student at the Duke University School of Medicine. She graduated from Johns Hopkins University with a B.S in Neuroscience and Psychology in 2021. She participated in and was an executive board member for the Anatomy Drawing Program for the past two years. At Duke, she serves as a curriculum committee member for Duke's Hotspotting Initiative, volunteer for the Senior Support Program, a student leader for one of the second-year medical students' classes, co-president of the Internal Medicine Interest Group, and Admissions Committee Representative and Vice President for the Asian Pacific American Medical Student Association. She is interested in pursuing internal medicine and incorporating medical education and mentorship into her future career. In her free time, she enjoys bouldering, reading, and playing board and card games with friends. gk125@duke.edu

Kim, Kain

Kain Kim is a third-year medical student at the Emory University School of Medicine, where she serves as course director and instructor of a museum-based elective course. She earned her BA with honors in English from Johns Hopkins University and completed a 2019 Fulbright Fellowship in Skopje, North Macedonia. Her academic interests include using the art museum as a teaching space for healthcare professionals and learners. kaikim0213@gmail.com

Kim, Gina

Dr. Gina J. Kim is an Assistant Professor of Clinical Pediatrics at Keck School of Medicine of USC. Dr. Kim is a Pediatric Intensivist at Los Angeles County + USC. She received her BA in Computer Science from Wellesley College while completing the Pre-Medical Track. She worked as a software developer building electronic medical record systems before realizing her true passion was medicine. Dr. Kim attended the dual-degree MD/MPH Program at the University of Texas Health Science Center in San Antonio and completed her residency. During her critical care fellowship at Children's Hospital Los Angeles, she rediscovered her excitement for quality improvement, research, and medical education. As the Co-Director of Scholarly Activity for the LAC+USC Pediatric Residency Program, she helps develop curricula and mentor resident-led projects while having the privilege of caring for the underserved and marginalized in Los Angeles alongside others who share the same passion. ginajkim@usc.edu

Kling, Jewel

Juliana (Jewel) Kling, MD, MPH, MSCP, FACP, IF is Professor of Medicine, Chair of the Division of Women's Health Internal Medicine, Assistant Director of the Women's Health Center and Dean of the Mayo Clinic Alix School of Medicine AZ campus at the Mayo Clinic in Scottsdale, Arizona. She completed her MD and a master's in public health at the University of Arizona Tucson and Internal Medicine Residency at Mayo Clinic Arizona, followed by a Chief Internal Medicine fellowship year. Her clinical and research interests are menopause, sexual health, LGBT care, education, as well as expansion of the discipline of Sex and Gender specific medicine. She is recognized as an institutional and national expert and leader in menopause. She speaks at national meetings on topics related to menopause and hormone therapy and has published extensively in the field. She is a Menopause Society Certified Practitioner (MSCP), a fellow and board member of the International Society for the Study of Women's Sexual Health (ISSWSH), and member of the American Medical Women's Association's Sex and Gender Health Collaborative (SGHC). She Co-Chairs their Curriculum Committee. She is part of the transgender and intersex specialty clinic committee at Mayo Clinic Arizona and has been a co-chair of the LGBTI Mayo Employee Resource Group. kling.juliana@mayo.edu

Koutsenko, Brianna

Bianna Koutsenko, a third-year medical student at Rowan-Virtua School of Osteopathic Medicine, is passionate about understanding and addressing healthcare disparities. She aspires to become a culturally competent physician and dreams of participating in Doctors Without Borders to provide care, educate others, and enhance health literacy among vulnerable patient populations. Bianna deeply enjoys connecting with patients and healthcare team members, valuing their unique stories. Her ultimate goal is to leave a positive impact on her patients and the global community. Beyond her medical studies, Bianna actively engages in various fitness activities, including HIIT, pilates, and strength training. She also has a personal goal of obtaining a personal training certification and enjoys pursuing her passion for cooking during her free time. koutse67@rowan.edu

Kruczek, Cassandra

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Ku-Borden, Teresa

Dr. Teresa Ku-Borden is a family physician and a mother of two young children. She received her medical degree at the USC Keck School of Medicine in Los Angeles. She then completed her residency and high-risk obstetrics fellowship at Ventura County Medical Center in Ventura, California. Subsequently, she moved back to Los Angeles to join Family Care Specialists. This group practice

provides comprehensive primary care to the East Los Angeles community and delivers graduate medical education to family medicine residents. She is the Program Director of the Adventist Health White Memorial Family Medicine Residency program (AHWM FMRP). Her interests include women's health, specifically pregnancy, childbirth, lactation, interdisciplinary chronic disease management, hospital medicine, and providing trauma-informed care as a primary care physician. She also serves as the Chair of the FMRP Diversity, Equity, and Inclusion (DEI) committee and the Graduate Medical Education DEI strategy group, which oversees DEI and cultural humility efforts across multiple residency programs at AHWM. kubordtt@ah.org

Kuilanoff, Elizabeth

Elizabeth Kuilanoff is a general pediatrician and faculty member at Children's Hospital Los Angeles. She is also a student in the Masters of Academic Medicine program at the University of Southern California. She is passionate about medical student and resident education and has been very involved in teaching and mentoring since attending medical school at the University of California, Davis (2014). Her current research and educational projects include a medical student transition curriculum for pediatric-bound students, resident outpatient and community pediatrics curriculum, and physical activity and obesity programs for school-aged children. ekuilanoff@chla.usc.edu

Kumar, Apoorva Anil

Apoorva Kumar is a Foundation Year 2 trainee working in London. Since starting at St George's, University of London, she has pursued various teaching, academic, and leadership roles. Some of her varied achievements include her work for the Henry Gray Anatomy Society, developing highly acclaimed teaching and revision materials, her tenure as vice president of Intersectional Feminism Society, working toward gender equality in medicine, and becoming a National Institute for Health and Care Excellence student champion, promoting the use of evidence-based care. Her passion for research has also resulted in an award for best dissertation following her intercalated degree. This work has since been published in *Stroke*, and it has won the runner-up prize from the General Medical Council Student Professionalism competition in 2021 for the creation of an online teaching resource. Since leaving medical school, she has continued her work as a driving force behind several educational schemes for medical students, joining the Junior Doctor Education Committee at Princess Royal University Hospital. As a result, she has led and coordinated the "Mini Grand Rounds" scheme, providing students with vital learning and reflection experiences using real-life cases. She has additionally co-led the "Bleep Week" scheme, a core component of the final year medical curriculum. Her work on these schemes was recognized by the South London Medical Deanery, winning awards for both teaching and leadership. apoorvaanil.kumar@nhs.net

Kuperstein, Harry

Harry Kuperstein is a second-year medical student at the Renaissance School of Medicine at Stony Brook University and holds a B.S. in Neuroscience from Johns Hopkins University. His research interests include the use of simulation in medical education and exploring various clinical research topics in critical care medicine. harry.kuperstein@stonybrookmedicine.edu

Kwolek, Deborah Gomez

Deborah Gomez Kwolek, MD, FACP, MSCP, is lead physician of the Women's Health and Sex and Gender Medicine Program, Department of Medicine, Massachusetts General Hospital, and Assistant Professor of Medicine at Harvard Medical School. She is a national leader in Women's Health and sex and gender based medicine at all levels: undergraduate, graduate, and faculty development/ CME. She is the course director for two International Harvard CME/ Postgraduate courses. She was the principal investigator on an interprofessional education project which extended to 15 health professions schools and focused on tools and assessments to bring sex differences into curricula funded by the Fund for the Improvement of Postsecondary Education. She is Co-Chair of the mentorship committee of the American Medical Women's Association's Sex and Gender Health Collaborative which currently sponsors a national student project to affect Medical Education in Sex and Gender Based Medicine through the development of curricular resources. Within the Society of General Internal Medicine, Dr Kwolek is the immediate past chair of the Women and Medicine Commission, and co-author of the Sex and Gender Based Women's Health Competencies project for

residency training in internal medicine. She is co-editor and co-author of the textbook *Sex and Gender Based Women's Health*, and section editor/ author of the textbook *Primary Care Medicine (Goroll)*.
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Kwon, Yong-Jei

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LaCount, Anissa

Dr. Anissa LaCount is a dedicated Family Medicine physician known for her contributions to medical education, patient care, and peer support within the field of medicine. Her career encompasses roles as an Instructor in the Department of Clinical Science, Family Medicine Clerkship Director, and Specialty Director at the Kaiser Permanente Bernard J. Tyson School of Medicine. She is also a Volunteer Clinical Professor at the University of California, Riverside (UCR). Dr. LaCount enjoys developing innovative and impactful curricula at KPSOM. anissa.y.lacount@kp.org

LaRue, Chase

Chase LaRue, MD, is a Family Medicine Intern at the A.T. Augusta Military Medical Center in Alexandria, Virginia. His prior career in secondary education laid the foundation for his interest in innovating and optimizing undergraduate and graduate education. His involvement with the Teaching Test Kitchen arose from his prior experience and his desire to bring teachers and learners together in a space where they could co-create learning and build relationships geared towards feedback, growth, and future development. Despite graduating from medical school in 2023, he is actively involved in the education of medical students and has personal goals of continuing to develop methods for student involvement in their own teaching and learning. chase.w.larue@gmail.com

Lee, Hannah

Hannah J. Lee is a medical student at the David Geffen School of Medicine at UCLA and a past graduate of Brown University. She is also the co-founder of A-Team and a passionate supporter of Asian American empowerment. During her career journey, Hannah has personally struggled with generalized assumptions about her motivations to pursue medicine. Hence, she intends to shed light on the hidden, invisible stories of microaggression and racism among our AANHPI community. Through the A-Team Med initiative, Hannah aims to launch and catalyze these needed conversations via creative outlets to ultimately unify and empower the next-generation healthcare physicians. Apart from her commitment to A-Team Med, Hannah devotes her time to learning the various nuances of psychiatry. With goals to develop culturally sensitive mental health interventions, she appreciates academic and community spaces that cultivate the exchange of diverse thoughts and values.
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Lee, May

May Lee is a clinician-educator and Program Director of the Pulmonary and Critical Care Medicine Fellowship Training Program at the University of Southern California. She has a broad background in the social sciences and has worked in education in various roles. Her current career is in pulmonary and critical care medicine. As an educator, Dr. Lee has devoted her time to improving the learning environment and experience of her students and trainees. She helps develop novel educational programs and teaching modalities for trainees locally in her own programs and in a national setting. Further, Dr. Lee has published on both clinical and educational topics. Specific to education, her manuscripts range from explorations into trainees' perceptions and implications on learning and growth to outcomes of programs she has developed and general educational topics. As a researcher, she has been involved in various projects ranging from basic science bench work to survey projects to implementation science studies. Dr. Lee also has experience as a Principal investigator (PI) and co-PI on projects to accomplish research goals. Dr. Lee has successfully administered projects, collaborated with other researchers, and produced peer-reviewed publications from various projects.
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Lee, Yelim (Autumn)

Yelim Lee is a second-year medical student at the Keck School of Medicine of USC. For as long as she can remember, she has been keenly interested in science, technology, and outreach. In 2021, Yalim graduated from the California Institute of Technology with a BS in Biology. Passionate about the intersection between healthcare and technology, she is excited to share relevant opportunities with her peers during medical school. Yalim enjoys listening to music, learning new languages, and exploring new restaurants in Los Angeles. yelimlee@usc.edu

Lee, Minsub

Minsub Lee is currently a second-year medical student who attends the University of California San Diego School of Medicine (UCSD). He completed a Bachelors of Science in Psychobiology at the University of California Los Angeles and worked for the UCLA baseball team as a Sports Medicine intern. He has a current interest in increasing representation of minority groups in the medical field, and he also helped direct a research education program for high school students from diverse fields. In addition, he has a deep passion for caring for the houseless population and serves as a student manager for the UCSD street outreach team. After graduating from medical school, he hopes to complete an internal medicine residency program and pursue a career in gastroenterology. mil101@health.ucsd.edu

Lee, Ye Lim (Sarah)

Ye Lim (Sarah) Lee is a third-year medical student at the University of California San Francisco School of Medicine. She earned her Bachelor of Science degree in psychobiology at the University of California Los Angeles in 2020. She is passionate about medical education and mentorship and has explored her interests in medical school by co-leading the Mentorship Committee within the Asian Pacific American Medical Student Association and working on a curricular improvement project through the Curriculum Ambassadors program. Sarah hopes to continue learning more about medical education within and beyond her time in medical school. sarah.lee5@ucsf.edu

Levine, Ari

Ari Levine is a second-year medical student at Emory University School of Medicine in Atlanta, Georgia. Ari graduated from the University of Pennsylvania with a neuroscience degree. After college, Ari spent two years as a high school science teacher in West Dallas through Teach for America. There, he collaborated with Southern Methodist University to build and pilot a series of problem-based learning lessons for his classes. He is interested in anesthesiology and passionate about medical education. Ari still teaches, leading high school students through case-based medical learning through the Young Physicians Initiative at the Druid Hills High School in Atlanta. ari.levine@emory.edu

Levine, Diane

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Levine, Hannah

Hannah Levine is a fourth-year medical student at the Charles E. Schmidt College of Medicine at Florida Atlantic University. Hannah wants to pursue a career in Physical Medicine and Rehabilitation. Hannah received a BS in Biochemistry from the Harriet L. Wilkes Honors College at Florida Atlantic University. Current research interests include improving the quality of life for people with chronic pain, dementia, and other vulnerable populations through integrative therapies, including exercise and neuromodulation. Hannah is also interested in improving medical student education and interest in PM&R and working with older adults and people with disabilities. hlevine2016@health.fau.edu

Li, Phoebe

Phoebe Li is a third-year medical student and is a part of her institution's Distinction in Medical Education program. This program has afforded her opportunities to learn more about teaching medical students and conducting medical education research. Her love for teaching started as a tutor in high school, and her research interest began during her undergraduate education. Phoebe aspires

to pursue a career in academic medicine, and I look forward to teaching and mentoring future students. pll54@njms.rutgers.edu

Lim, Wen Wei

During her time in university, Wen Wei Lim served as the Coordinator for the student-led peer tutoring organization, IMU Consultoid, from 2021 to 2022. In this role, she was actively involved in program planning, framework evaluation, and the successful implementation of online learning, which reached a cumulative outreach of 6000 students during the challenging pandemic period. Additionally, she contributed as a Sub-Committee Member for the IMU Surgical Society in 2020, organizing events like "Women In Surgery" to empower women pursuing careers in surgery. Her commitment to music is reflected in my achievements, including Distinctions in ABRSM Violin Grade 7 and ABRSM Music Theory Grade 5. jennette_lim98@yahoo.com

Lim, Caryssa

Caryssa Lim is a third-year medical student at the Kaiser Permanente Bernard J. Tyson School of Medicine. She is passionate about developing curriculum and programs to train the next generation of healthcare professionals to practice medicine with a socially accountable and systems-driven approach. She received her Bachelor of Arts degree from the University of Chicago and her Master of Public Health degree from the University of California, Los Angeles. She currently sits on the Board of Directors for the Society of Teachers for Family Medicine. caryssa.n.lim@kp.org

Little, William Brady

Wm. Brady Little, DVM, MSc. has ten years of private practice experience in companion and equine medicine and surgery. In addition, he has ten years of teaching experience at Ross University School of Veterinary Medicine (RUSVM) with a primary emphasis on Gross Anatomy and Surgery. brlittle@rossvet.edu.kn

Llauro, Natalie

Natalie Llauro is a second-year medical student at the University of California, Irvine School of Medicine. She is from Los Angeles, CA. She graduated from the University of Notre Dame in 2021 and double majored in Science Preprofessional Studies and Anthropology with a minor in Latino Studies. At UCI, Natalie is the Program in Medical Education for the Latino community (PRIME-LC), a program emphasizing leadership, advocacy, and service in under-resourced Latinx communities. She is passionate about mentoring students from underrepresented backgrounds in medicine, reducing healthcare disparities, and working with underserved Latinx communities. nllauro@hs.uci.edu

Llobrera, Kairos

Kairos Llobrera received his PhD in English from Columbia University. His academic interests include narrative medicine, U.S. immigration (literature, history, and law), critical race theory, and 20th century and contemporary U.S. ethnic/minority literatures. At USC since 2011, he has held various administrative positions related to undergraduate, graduate, and pre-medical/pre-health education. Presently, he is Assistant Professor of Clinical Medical Education and serves as Director of Community Engagement for the Narrative Medicine Program. kairos.llobrera@med.usc.edu

Loel, Solomon

Dr. Solomon joined the inaugural faculty of the Kaiser Permanente Bernard J. Tyson School of Medicine (KPSOM) in 2019, and serves as a Professor in the Department of Health Systems Science. He directs the school's Health Systems Science Phase 3 Selectives program in which medical students are placed in KP and community partner organizations for non-clinical rotations, a required part of the school's curriculum. Prior to joining KPSOM, Dr. Solomon served as Vice President of Community Health at Kaiser Foundation Hospitals and Health Plan, where he oversaw the design and execution of the organization's community-based initiatives, and worked closely with other leaders to develop and implement Kaiser Permanente's multi-faceted strategy for addressing the social drivers of health for KP members and the communities it serves. Dr. Solomon received his Ph.D. in Health Policy from Harvard University and an M.P.P. from the University of California, Berkeley. loel.solomon@kp.org

Ma, Symon

Symon Ma is a medical student at Duke University School of Medicine, class of 2025. He graduated from Duke University with a B.S. in Chemistry in 2021. He is pursuing an academic and medical career in ophthalmology and will be conducting a translational research project on ocular immunology at the Bascom Palmer Eye Institute at the University of Miami. He serves on the executive board of the Anatomy Drawing Program after being a student and board member of the program for the past two years. At Duke, he is also the community co-chair for the Duke Ophthalmology Interest Group and a board member of the Duke Hospotting Initiative. He is a community executive team member for the Asian Pacific American Medical Student Association. He enjoys running, playing and composing music, and working as a chef in the Duke student-run restaurant. snm27@duke.edu

Mackey, Brendan

Brendan Mackey is a third-year medical student and co-president of the class of 2025 at Drexel University College of Medicine. He graduated from Bates College with a degree in biological chemistry in 2019. Brendan was previously involved in various clinical trials that concerned the use of vaccines and cellular immunotherapies for malignancies and COVID-19 at Harvard Medical School and Beth Israel Deaconess Medical Center. He now participates in critical care research as a member of the Penn Lung Rescue Team at the University of Pennsylvania, focusing on life support measures for patients with COVID-19. Regarding educational involvement, Brendan has led the creation of a medical education video series at Drexel University. He studies the use of AI and learning algorithms to enhance student learning experiences. His current research interests involve the use of AI in medical education and its potential use to enhance outcomes in critical care medicine. brendanpatryck@gmail.com

Mahmoud, Sara

Sara Mahmoud is an Assistant Clinical Professor of Pharmacy Practice at the University of the Pacific, Thomas J. Long School of Pharmacy and Pharmaceutical Sciences. She completed her PharmD at the University of Colorado, PGY1 at Hamad Medical Corporation, and a fellowship in Academic Pharmacy at the University of Southern California. Dr. Mahmoud has twelve years of experience as a critical care/ED clinical pharmacist and is a board-certified critical care pharmacist. She has experience in integrating digital health and artificial intelligence in pharmacy education. Dr. Mahmoud also coordinated an ACPE-accredited professional development office in pharmacy. She received several awards for her work in CPD and expanding pharmaceutical services internationally. Her educational initiative during COVID-19 was published and received international recognition. smahmoud@pacific.edu

Majagi, Anusha

Anusha Majagi is a second year Internal Medicine resident at the Detroit Medical Center/Wayne State University residency program. She is passionate about medical and resident education, and has been active in her program to bring awareness to the importance of ultrasound and procedural training. Her hope is to help establish a curriculum to provide residents with the training needed to become proficient and confident in using ultrasound as a tool to aid in diagnoses and bedside procedures. hn1685@wayne.edu

Maniscalco, Jennifer

Jennifer Maniscalco is a Pediatric Hospitalist and the Director of Medical Education/Designated Institutional Official at Johns Hopkins All Children's Hospital in St. Petersburg, Florida. She received her undergraduate and medical degrees from Georgetown University and a Master's in Academic Medicine from the University of Southern California Keck School of Medicine. Dr. Maniscalco completed a general pediatrics residency and PHM fellowship at Children's National Medical Center in Washington, D.C. Her primary interest is medical education, primarily for pediatric residents, PHM fellows, and practicing pediatric hospitalists. She is the former program director for the Pediatric Hospital Medicine (PHM) Fellowships at Children's National Medical Center and Children's Hospital Los Angeles. Dr. Maniscalco has served as the Chair of the AAP SOHM Fellows Conference, Chair of the PHM Education Task Force, Co-Editor for the PHM Core Competencies, and contributing author

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Mann, Gary

Gary Mann is a second-year medical student at Indiana University School of Medicine. He earned a Bachelor of Science in chemistry from Indiana University-Purdue University Indianapolis (IUPUI) in 2022, where he was involved in undergraduate research and peer teaching. Gary has experience in community-based research and has volunteered at local non-profit organizations and hospitals. Throughout undergraduate and medical school physician shadowing, he observed the important relationship between medical professionals and the local community. Gary is involved in longitudinal community-based research with Meals on Wheels, religion, and spiritual studies through a scholarly concentration and student interest group leadership. He plans to practice medicine in his hometown community in the future. gmann@iu.edu

Mareboina, Manvita

Manvita Mareboina is a second-year medical student at Penn State College of Medicine's University Park Program interested in bioinformatics, genomics, and artificial intelligence research. Within the clinical realm, her pursuits converge in neurosurgery and radiology, where she actively engages in ongoing research endeavors. Outside of research, she is interested in community health, preventive medicine, and improving health literacy. She is working with her colleagues at Penn State Health on a collaborative health literacy and mobile clinic initiative in rural communities surrounding State College, Pennsylvania. mmareboina@pennstatehealth.psu.edu

Maristany, Daniela

Dr. Maristany is an Assistant Professor at the University of California San Francisco in the Department of General Internal Medicine. She practices primary care and attends on the inpatient medicine teaching service. She completed her residency in internal medicine primary care at UCSF/San Francisco General Hospital and a clinician educator fellowship at UCSF. She is passionate about working towards equity in medical education. daniela.maristany@ucsf.edu

Marks, Jennifer

Jennifer R. Marks, MD, FACP Associate Professor Of Clinical Medicine, Department of Medicine, Keck School of Medicine of USC. Dr. Marks received her MD from the University of Maryland School of Medicine and then completed her Internal Medicine residency at the University of Virginia. After several years in private practice, she returned to UVa, serving as faculty in the Department of Medicine. Dr. Marks was active in UME (director of the history and physical examination course) and GME (core faculty for the IM residency program). She received the Dean's Award for Excellence in Teaching in 2013 and was inducted into the University of Virginia Academy of Distinguished Educators. Dr. Marks joined the faculty of the Keck School of Medicine of USC in 2014 as an Internal Medicine clinician-educator. Teaching roles include overseeing and mentoring medical students and residents in inpatient and outpatient clinical settings. Dr. Marks is a faculty leader in the Internal Medicine residents' clinic, overseeing the didactics series on ambulatory topics. She became an Associate Program Director for the IM residency in 2021. As a primary care physician, she maintains her ambulatory patient clinic. Dr. Marks is married and has three children. She is a pathologic reader of historical fiction. She also loves traveling, gardening, and looking for treasures at flea markets. Email: marksjr@med.usc.edu marksjr@med.usc.edu

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Zoe Matticks is a second-year medical student at UC San Diego School of Medicine. She obtained her BA in Neuroscience at Wellesley College and MPH in Health Policy at Harvard T.H. Chan School of Public Health. She also spent two years working as a healthcare consultant in San Francisco before starting medical school. She currently serves as a member of the Organization of Student Representatives (OSR) to the AAMC, a STARS (Students and Trainees Advocating for Resource

Stewardship) Trainee, and a co-president of the OBGYN and Medical Students for Choice Student Interest Groups. For this study, she will participate in creating study content and materials, recruitment, study conduct, data analysis, and preparation of manuscripts.
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Mayer, Alexandra

Alexa Mayer's passion for education unexpectedly began with a phone call from her old high school principal. Three days before school started with the COVID-19 pandemic in full swing, she had to learn how to teach 138 15-year-olds biology online. She read books on curriculum and development, made and delivered lab kits, designed escape rooms and activities, and deepened her love of education. Now, she is a medical student and the CEO of a non-profit, medical free clinic in Colton. Her time teaching during a pandemic emphasized the importance of equity and access to education. She is dedicated to providing increased access to care and exploring educational innovation both now and in her career as a physician. Alexa is passionate about making medical education more accessible and inclusive, especially in dermatology and Skin of Color. She looks forward to sharing her insights on the innovative curriculum, emphasizing the importance of diversity in medical education, and advocating for improved skin health awareness. mayera@cusm.org

McKenzie, Rhea

Rhea McKenzie is a second-year undergraduate student at the University of California, Los Angeles, majoring in Biology to obtain a Bachelor of Science degree. She is a co-director of the External Relations Committee of UCLA's Medical Aid Initiative and has been a part of the organization since her freshman year. rmckenzie26@ucla.edu

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Paula Mendoza is a fourth-year medical student at UC Irvine School of Medicine Program in Medical Education for the Latino Community. She completed her undergraduate degree at UCLA. Paula completed an employee interpreter certification program at UCLA. As a medical student at UC Irvine, she co-founded "Salud Sin Barreras," an interpreter mentorship program at the UC Irvine Outreach Free Clinic, to help undergraduate volunteers obtain proper training as interpreters and improve quality care. Paula is also a co-founder and co-chair of the UCI Child and Adolescent Psychiatry Interest Group and the new medical education curriculum titled "Diversity in Mental Health" at UC Irvine. She is a member of the AACAP Latinx Caucus, LMSA, NHMA, and APA, as well as a current research fellow for the AACAP Jeanne Spurlock, MD, Research Fellowship in Substance Abuse and Addiction for Minority Medical Students, supported by the National Institute on Drug Abuse, and AACAP's Campaign for America's Kids. She is the previous president of the LMSA Chapter at UC Irvine and previous president of the PRIME-LC Student Advisory Council at UC Irvine.
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Mirzaei, Soheil

I am a PhD student in the field of anatomy. I have written several books in the field of medicine, and my recent book were selected as the best books on basic medical sciences in Iran. This book has 2690 verses of poetry, completely specialized in the field of bones and joints. I have a Bachelor's Degree in Radiology and a Master's degree in Anatomy. Mirzaei.soheil@yahoo.com

Mishra, Manish

Dr. Manish Mishra is an Associate Professor of Biochemistry and Molecular Biology and Assistant Director for the Master of Science in Preclinical Sciences (MSPCS) program at the Department of Biomedical Sciences, Mercer University School of Medicine (MUSM), Macon, GA. He earned his Ph.D. in Biochemistry from the Institute of Medical Sciences, Banaras Hindu University, M.Sc. in Biochemistry from Dr. RML Avadh University, and B.Sc. in Chemistry and botany from the DDU Gorakhpur University, India. Before coming to Mercer University, he served at Trinity Medical Sciences University, School of Medicine, St. Vincent, where he holds the academic rank of Associate Professor. Dr. Mishra's research interests include medical education, diabetes and its complications, nutrition, and cancer. Dr. Mishra has more than 21 years of academic experience in medical education and research. Dr. Mishra has published one book, three chapters, 36 articles, and 16

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Mitchell, Brittney

Dr. Brittney Mitchell is a board-certified emergency medicine physician who works for LSU Health in Shreveport. She attended Baylor University in Waco, TX, for her bachelor's degree. Dr. Mitchell attended LSU Health Shreveport Medical School and graduated in 2017 before completing her residency at the same hospital in 2020. She then did a one-year fellowship in Simulation education at the University of Arizona in Tucson before returning to Ochsner LSU Health in Shreveport to be the director of simulation education and an assistant program director in the Department of Emergency Medicine. Her interests include creating simulation curriculums to enhance the education of residents. She is a member of the Society of Simulation in Health Care, where she participates in subcommittees to further simulation education in medical school and residency programs nationwide. brittney.mitchell@lsuhs.edu

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Dr. Yuliya Modna is an Associate Professor of the Physiology Department and a Discipline Chair. Dr. Modna teaches the medical physiology course for medical and premedical students, serves as a Chair of the Graduate Student Master of Health Sciences Thesis Committee, and a Chair of the Academic Counselling Team. Her research interests are the physiology and morphology of the solid phase of biological fluids and the impact of circadian rhythms in time management organization among students. Current research interests are in areas of medical education and assessment. She is a member of the American Physiological Society (APS), the International Association of Medical Science Educators (IAMSE), and the Federation of European Neuroscience Societies (FENS). She has 38 publications in peer-reviewed international journals, abstract books, and four patents. ymodna@tmsu.edu.vc

Mohammed, Buru

Buruj Mohammed is a third-year medical student at the Medical College of Wisconsin (MCW). She completed her Bachelor of Science in Chemistry and Spanish at the University of Wisconsin-Madison. She is interested in pursuing a career in either emergency medicine or general surgery. Her research interests include medical education and addressing health disparities in underserved patient populations. bmohammed@mcw.edu

Mojan, Yasi

Dr. Yasi Mojan earned her Doctor of Pharmacy and Master of Science in Pharmaceutical Sciences from USC Mann School of Pharmacy and Pharmaceutical Sciences. She is pursuing her Ph.D. in pharmaceutical and translational sciences from the University of Southern California. Additionally, she serves as the program director of the USC International Summer and Winter Program. Her research has an emphasis on computational chemistry and structural-based drug design. Yasi got her Bachelor of Science in Biology, Bachelor of Arts in Chemistry, and a minor in Art at California Lutheran University. During her Undergraduate studies, she conducted graduate-level research on the atomic-level structure of the DesD enzyme using x-ray crystallography and site-directed mutagenesis technique along with CCP4i2, Refmac5, and COOT computer programs. This research was published in the Journal of Biochemistry under the title of Cofactor Complexes of DesD, a Model Enzyme in the

Virulence-related NIS Synthetase Family. The molecular structures have been published in the Protein Data Bank. Currently, she is working on the Computational Optimization of a Modified Oligonucleotide Molecular Beacon using NASNIC and NASDAC at the USC School of Pharmacy. Dr. Mojab served as the course facilitator and Supplemental Instruction Leader for Pharmaceutical Sciences, making interactive video lectures to teach Chimera features and making study guides and worksheets to facilitate student learning. mojab@usc.edu

Molina-Nava, Annamaria

Annamaria Molina-Nava completed her undergraduate studies at the University of Houston–Clear Lake. She is currently a second-year graduate student at Texas State University enrolled in the Healthcare Administration degree program. She is also a patient coordinator at The University of Texas MD Anderson Cancer Center. She is completing an internship at Baylor College of Medicine with the Center for Professionalism with Drs. Ellen Friedman and Stacey Rose. During her time at Texas State, Annamaria was a co-author of a paper published in the Journal of Medical Internet Research about the effectiveness of telemedicine as a modality of care. She is committed to enhancing professionalism in medicine through education and quality improvement initiatives. annamaria.molina-nava@bcm.edu

Mucharraz-Rodriguez, Valeria

Valeria Mucharraz Rodriguez majored in biology with a chemistry minor. Her previous research focused on pore-forming toxins and the mechanism of action for fighting these toxins. Her current position as a student in the School of Biomedical Sciences and a Teaching Assistant for the Texas Tech University Health Sciences Center School of Medicine has prepared her to create educational resources for first-year medical students and mentor them during the first year of their training. Valeria is interested in developing medical education resources that allow students to utilize their time while increasing their wellbeing effectively. valeria.mucharraz@ttuhsc.edu

Mullins, Shatae

Shatae Mullins is the Behavioral Health and Diversity Specialist at the Idaho College of Osteopathic Medicine. With a passion for promoting inclusivity and improving mental health, Shatae has established herself as a dedicated professional in her field. Shatae holds a Bachelors in Communication Studies from the University of North Carolina at Greensboro and a Master's in Clinical Mental Health from Northwestern University, where much of her graduate work and research focused on multiculturalism in parallel to mental health education. Shatae currently serves as a member of the Association for Multicultural Counseling and Development, Secretary for the Council on Diversity for the American Association of Colleges of Osteopathic Medicine, and as a member of ACES Women's Network of Idaho. In her current role, Shatae Mullins is committed to making a positive impact by bridging gaps in diversity and promoting mental wellbeing. smullins@icom.edu

Munjy, Luma

Dr. Luma Munjy is an Assistant Professor of Pharmacy Practice at Chapman University School of Pharmacy. Dr. Munjy received her Doctor of Pharmacy degree from The University of California, San Francisco in 2013, and continued her training as a resident in Ambulatory Care at The University of Southern California from July 2013 to July 2014. Dr. Munjy's clinical research focuses on methods to imbed clinical pharmacists in ambulatory care settings with an emphasis on inter-professional team-based delivery of care. In addition to Dr. Munjy's clinical research interests, Dr. Munjy will be initiating a Master of Education in Health Professions degree through Johns Hopkins University to explore how health professional students can be better trained and assessed in the affective domain of learning.

Munoz, Maria

Maria Munoz, MD, is a Family Medicine Physician in South Texas. She currently serves as the Assistant Dean of Clerkships at the University of Texas Rio Grande Valley. Dr. Munoz teaches learners at the undergraduate levels. In her prior roles, she served as the Clerkship Director for the Family Medicine Clerkship and the Associate Program Director at the University of Texas-Rio Grande Valley (UTRGV), Family Medicine Residency. Before joining UTRGV, Dr. Munoz was a Family Medicine Regional Clerkship Director for the University of Texas Health Science Center in San

Antonio. Additionally, she is interested in curriculum development and resident and student evaluation processes. She enjoys spending time with her family and writing children's books in her spare time. mdmunoz2@att.net

Muthukumar, Akila

Akila Muthukumar graduated summa cum laude from Harvard College with a major in human developmental and regenerative biology and a minor in English. She helped establish and lead a question-listing service at Massachusetts General Hospital and has done a lot of writing, including for the health and medicine website, STAT News. She hopes to combine these interests as a physician-writer. This year, Muthukumar is living in rural south India and working at a nonprofit dedicated to people with intellectual disabilities. akilamuthukumar@college.harvard.edu

Neman, Sophia

Sophia Neman is a medical student at the Medical College of Wisconsin (MCW). She is currently pursuing a dermatology research fellowship at Massachusetts General Hospital between her third and fourth year of medical school. Her research interests include medical education, LGBTQ+ dermatology, skin of color (SOC) dermatology, gender disparities in medicine, and public health. Starting her M1 year, she took a keen interest in improving representation of skin of color in dermatologic training and initiating conversations on the importance of cultural humility in clinical care. She collaborated with MCW faculty to improve representation of SOC, LGBTQ+, and modestly-dressing patients with religious or cultural considerations in M3 and M4 dermatology lectures. These efforts focused on improving photographic representation of SOC dermatoses and designing new lecture material focused on cultural humility. Her additional research endeavors have included helping to lead a dermatology community outreach committee to improve free clinic patient volume and spearheading a sun-safety initiative to install now eight free sunscreen dispensers across Milwaukee. Currently in Boston, some of her projects are focused on womxn's health, contact allergens in cosmetics, and improving dermatologists' involvement with health policy efforts. She is also leading a new committee at Harvard to discuss ethical considerations for research with transgender patients. sneman@mcw.edu

Nguyen, Kent

Kent Nguyen, OD, FAAO, is an Assistant Professor of Clinical Ophthalmology at the USC Roski Eye Institute. He earned his bachelor's degree in Integrative Biology from the University of California, Berkeley, and his Doctor of Optometry degree from Southern California College of Optometry at Marshall B. Ketchum University. His practice involves examining patients in primary care, contact lenses, and ocular diseases. He has presented multiple lectures to the USC community on the importance of healthy vision. He strives for quality eye care with confidence, compassion, and enthusiasm. Dr. Nguyen is also passionate about recruiting more undergraduates to choose careers in eye care/research to help ensure a diverse workforce to meet the future needs of our nation (and the world) in promoting health and diagnosing and treating diseases affecting the eyes. Kent.Nguyen2@med.usc.edu

Nguyen, Kim

Dr. Kim Nguyen is a first-year resident at Chino Valley Medical Center. She was born and raised in California and was a medical student at the American University of Antigua. She is interested in using behavioral health and medicine to understand patients better, improve quality care, and find new ways to improve the quality of life of residents and patients. kngocnguyen31@gmail.com

Nguyen, Scott

Scott Nguyen is a faculty member at Maryville University. snguyen@maryville.edu

Nguyen, Stacey

Stacey Nguyen's interest in magic in a medical setting stemmed from her internship experiences at a needle exchange center in Los Angeles. The patient population there was often challenging to communicate with, and the attending physician had vast experience with de-escalation. Her leadership abilities to take charge of situations inspired her, and Stacey wanted to investigate factors

that could improve medical students' comfort when working with patients. Current published literature showed that magic therapy had beneficial applications for providers, which encouraged me to research further. Stacey worked with various professors at California Northstate University on research projects during my undergraduate years, namely a project to investigate the role of citric acid in kidney stone treatment under the guidance of Dr. Rosemary Effiong. The project elucidated key points of kidney stone formation using organic extraction and IR spectroscopy, and the results were presented at CNUCOM Research Day 2022. As a medical student, Stacey is researching under Dr. Damon Meyer the functions of microhomology in double-stranded DNA breaks of yeast cell lines of varying lengths and mismatches. She is also assisting on a secondary project assessing the extent to which the BRCA2 complementation of Rad52 differs in response to varying modalities of DNA damage. Under the direction of Dr. Rajendra Ramsamooj, Stacey is also conducting a systematic review of the efficacy of current muscular dystrophy therapies. stacey.nguyen6361@cnsu.edu

Nickel, Noura

Noura Nickel is a board-certified neonatologist at Johns Hopkins All Children's Hospital (JHACH) in St. Petersburg, Florida, and the rotation director of the neonatal intensive care unit (NICU) rotation for the JHACH pediatric residency program. She received her undergraduate and medical degrees from the University of Louisville School of Medicine. Dr. Nickel completed a general pediatrics residency and neonatal and perinatal medicine fellowship at JHACH. Her primary interest is medical education with a passion for teaching, and she serves as faculty for both the pediatric residency and the neonatal and perinatal medicine fellowship. She is actively engaged in trainee education and opportunities for professional development by participating in longitudinal courses related to teaching skills and curriculum development through the Johns Hopkins University School of Medicine Office of Faculty Development. She has been honored with various awards through her training and early career, including resident educator of the year (2017), resident of the year (2018), and attending of the quarter (Spring 2023). nnickel1@jh.edu

Nour, Hanna

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Meet Patel, a dedicated medical student at Wayne State University School of Medicine, possesses a profound interest in medical research. His active involvement in various research projects underscores his commitment to advancing medical knowledge and enhancing patient care. Meet’s research spans diverse topics, encompassing the evaluation of medical school curricula, the promotion of value-based care, the efficacy of virtual care, and strategies to alleviate physician workload. His ultimate aspiration is to seamlessly integrate research into clinical practice, thereby enhancing patient care. Beyond research, Meet emerges as a leader in advocating for harm reduction and educating fellow medical students in addiction medicine and pertinent clinical skills crucial in later clinical years. His active participation in interest groups dedicated to orthopedic surgery and urology involves organizing educational events for fellow medical students, fostering their understanding of these specialties. With his unwavering dedication to both research and medical education, Meet is well-positioned to exert a significant impact in the realm of medicine. gb2733@wayne.edu

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Dr. Kimberly B. Roth, PhD, MHS, joined the Mercer University School of Medicine (MUSM) in August 2020 as an Assistant Professor in the Department of Community Medicine on the Savannah campus. As a trained psychiatric epidemiologist, she conducts public mental health research and teaches in the population health curriculum and in the brain and behavior module for the medical students. Dr. Roth earned her MHS and PhD from the Johns Hopkins Bloomberg School of Public Health in Baltimore, MD, where she specialized in public mental health. She then completed a postdoctoral fellowship at the Center for Mental Health Services at the Brown School of Social Work at Washington University in St. Louis. As a result of her training and almost 20 years of experience in the public health world, Dr. Roth has strong epidemiologic and statistical skills that can be applied to a variety of contexts. Currently, her research focuses on the epidemiology of mental disorders in Latinx populations, and was the recipient of an NIMHD-funded Loan Repayment Award to examine comorbidity and service use among US Latinos. She is especially interested in addressing contextual factors affecting mental health in minority and underserved populations. Since coming to MUSM, she has expanded her focus to promoting health equity in rural Georgia, specifically as it relates to the opioid epidemic and suicide prevention. roth_kb@mercer.edu

Ruiz, Armando

Armando Ruiz was born and raised in Pismo Beach, the City of Endangered Clams and award-winning clam chowder. Under the cruel tutelage of Cal Poly professors, he sacrificed his sanity, savings account, and weekends to labor for degrees in both the time-honored discipline of philosophy

and the commercially viable field of biotechnology. He mastered the art of coming up with interpretations and reinterpretations for uninterpretable texts and perfecting the mental focus for his blindfolded, one-legged, plasmid pipetting pose. His favorite beer is Heineken. He also comes from a background in violence prevention, teaching comprehensive sex ed and medical scribing, and is now deciding among emergency, internal, family, or psychiatric medicine. Aside from the second-year grind of medical school, he spends his time honoring the dead as an Anatomy Lab Teaching Assistant, tutoring medical Spanish, and finding out what the numbers mean as Chief Financial Officer of Vi Corporation, a 501(c)3 nonprofit that serves the Inland Empire. In his free time, he enjoys studying history, playing video games, building metal puzzles, crocheting beanies to keep his ears warm, and drawing. He has chosen the path of becoming a lethal weapon in the martial art of Hapkido. He will be testing for the orange belt soon. He considers walking his dog named Ruby his most spiritual practice because he never feels closer to Mother Earth than when he is bagging her poop and wiping her muddy paws. ruiza@cusm.org

Ruprecht, Michal T.

Michal Ruprecht is a second-year medical student at Wayne State University School of Medicine. He graduated with honors and a B.S. in neuroscience from the University of Michigan in 2022, where he leveraged community action and social change to partner with individuals affected by the Flint water crisis. He wrote his senior thesis on a membrane protein and created three ceramic sculptures of the channel. Michal is interested in medical journalism and building trust among physicians, scientists, and the public. He edits and fact-checks content for ABC News as a member of the company's Medical Unit. He also contributes to MedPage Today and serves on their Editorial Advisory Board. He previously interned at ABC News, MedPage Today, and The Nation's Health, a publication of the American Public Health Association. Before that, he was a beat reporter, assistant editor, and investigative reporter for The Michigan Daily, the University of Michigan's independent daily student newspaper. At The Daily, he spearheaded a seven-month investigation into the culture of silence among student researchers. He also led the paper's research beat and worked on two additional investigations. Beyond The Daily, he was the first reporter to cover Stanford's incoming class of surgery residents and the attention they received for being nearly all women. Outside work, he serves on the Youth Advisory Board of Riley's Way Foundation. mrup@med.wayne.edu

Sachdeva, Karan

Dr. Karan Sachdeva is an international medical graduate from India, having completed my medical education in New Delhi. Following this, I delved into a year of research on Esophageal Adenocarcinoma at Mayo Clinic, Rochester. Dr. Sachdeva is currently immersed in the challenges of an Internal Medicine Residency at Louisiana State University Health, Shreveport. His passion lies in enhancing residents' clinical education and exploring the complexities of gastroenterology. ksa003@lsuhs.edu

Salazar, Israel

Israel Salazar, MS, is a learning specialist at Florida International University's Herbert Wertheim College of Medicine, where he provides academic support to undergraduate medical students (M1-M4). Israel's interests and background lie in Biology and STEM Education, and he has over a decade of experience working with STEM students from various roles within Florida's public K-12 and higher education systems. iasalaza@fiu.edu

Sall, Dana

Dr. Sall received her medical degree from State University of New York Upstate Medical University and completed her internal medicine residency training at University of Cincinnati, where she also completed a chief residency year and received her master's degree in education. She has expertise in curricular design, simulation, and assessment and feedback and has spoken on these topics nationally and internationally and has numerous related medical education publications. She has nearly 10 years of experience in medical education and currently serves as the Program Director for HonorHealth Internal Medicine Residency Program in Phoenix/Scottsdale, AZ. Under her leadership, the program has experienced significant growth and improvement, including: incorporating active learning strategies into the educational curriculum, adding clinical experiences in general medicine

and subspecialties to include exposure to patients with health disparities, increasing offerings to address wellness and burnout, adding a DEI curriculum, and most importantly, fostering a culture of growth mindset. dsall@honorhealth.com

Samaan, Natalie

Natalie Samaan is a fourth-year pharmacy student at the USC Mann School of Pharmacy and Pharmaceutical Sciences. She holds a bachelor's degree in Pharmaceutical Sciences from the University of California, Irvine. Natalie gained valuable experience working in various independent outpatient pharmacies throughout her academic journey. While at USC Mann, she co-established the USC Compassions Program, which addresses loneliness in elderly communities. Additionally, she served as the Director of Professional Affairs on the board of Phi Delta Chi, where she organized fundraising events for St. Jude's Children's Hospital. Natalie is also actively involved in research focused on comparing the attitudes of students and professors toward various active learning strategies. Due to her passion for academia, Natalie contributed as a course assistant for the International Student Summer Program. For the future, Natalie envisions pursuing a community-based residency program and ultimately seeks to build a career in academia. nsamaan@usc.edu

Sanford, Sydney

Sydney Sanford is a student at the University of Kentucky College of Medicine (UKCOM). Sydney is currently interested in pursuing a career in academic medicine and hopes to mentor the next generation of minorities in medicine to continue diversifying the healthcare field. She has previously conducted clinical research through the Center for Clinical and Translational Sciences (CCTS) in the Department of Endocrinology. Her research was conducted with an emphasis on those with diabetes and obesity, focusing on how FDA-approved drugs can improve outcomes in those who are pre-diabetic. Currently, Sydney is an E-board member of the Student National Medical Association (SNMA), which aims to empower underrepresented minorities in medical school and provide support and mentorship opportunities. She is also a part of the Dean's Student Committee on Admissions, which recruits prospective students to UKCOM. Sydney earned a Bachelor of Science in Biology and Psychology from the University of Kentucky. Sydney is a part of the inaugural (2023-2024) cohort of UKCOM MedMentors supporting first-year medical students. sydmsan97@gmail.com

Satpathy, Yasoda

Yasoda Satpathy is a second-year medical student at the University of California San Diego School of Medicine. Before medical school, she completed her Bachelors of Science in Health Sciences summa cum laude from CNUCHS. As a medical student, Yasoda is actively involved in the UCSD SOM community and serves as a student manager for the neurology free clinic, helps teach medical school courses, and conducts research on diversity, equity, and inclusion (DEI) in medicine. She is especially passionate about increasing the diversity of the medical field and helped lead a research education program for underrepresented high school students in San Diego. ysatpathy@health.ucsd.edu

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Schaivone , Kathryn

Kathryn Schaivone is Assistant Professor of Clinical Education at Keck USC School of Medicine and Assistant Director of the Clinical Education and Evaluation Center. Dr. Schaivone has over 20 years of experience in simulation-based education and holds certification from the Society for Simulation in Health Care (SSIH). She is the lead simulation educator for Keck SOM and conducts high-fidelity simulation for undergraduate and graduate medical education. She oversees the standardized patient program and designs cases and evaluation projects for Keck SOM. Dr. Schaivone serves as an accreditation site reviewer for SSIH. kathryn.schaivone@med.usc.edu

Schinelli, Anthony

Anthony Schinelli is a second-year medical student at the USF Morsani College of Medicine in Tampa, Florida. He graduated with a Bachelor of Science in Chemistry from the University of North Carolina at Chapel Hill in 2020. His interests in medicine primarily revolve around Psychiatry and

Emergency Medicine, particularly surrounding the management and treatment of mental health disorders in adolescents. His research interests include developing a better framework for understanding the role of artificial intelligence (AI) in medical education and using cutting-edge technology to streamline access to care in underprivileged populations. Beyond academics, he has a keen interest in languages and world literature. His favorite authors include Fyodor Dostoevsky, Irene Nemirovsky, Plato, and St. Augustine of Hippo. aschinelli@usf.edu

Schmidt, Natalie

Natalie Schmidt is a second-year medical student at the Medical College of Wisconsin. She received her B.S. in Biomedical Engineering from Valparaiso University, where she conducted gait and biomechanics research. She continued her research endeavors in medical school in orthopedic surgery. Natalie is passionate about innovating medicine not only through engineering but also through education. After seeing the need for lifestyle medicine in everyday practice, she applied her creativity on the medical student level. She is working to start a lifestyle medicine elective and interest group at MCW. In the clinical sphere, Natalie enjoys applying holistic medicine and helping students build healthier communities, especially empowering underserved populations. She volunteers and leads students at three free clinics in Milwaukee. Her passion for healthy living extends not only to patient interactions but to all those around her. nmschmidt@mcw.edu

Schnepf, Michael

Michael Schnepf, DO, is a second-year family medicine resident at the HonorHealth Family Medicine Residency Program in Scottsdale, AZ. Dr. Schnepf graduated from Campbell Medical School in North Carolina. His current clinical interests include addiction medicine in an underserved setting. mschnepf@honorhealth.com

Schreiber, Jacob

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Schwarzmann, Kathryn

Kathryn Schwarzmann is in her second year at the Kaiser Permanente School of Medicine. She graduated from Northwestern University with a Bachelor of Music in Performance, Violin, degree and also studied at the University of Wisconsin-Madison. Kathryn taught music in Milwaukee Public Schools and worked for the Madison Symphony Orchestra as Director of Education and Community Engagement for seven years. She also worked on a team serving as the Interim Executive Director for the Madison Symphony Orchestra throughout its 2021- 2022 season. Kathryn spent two years as Chair of the League of American Orchestras Education and Community Engagement Leadership Committee, planning and leading many national conference sessions and networking events. Throughout her time in the arts, she has also worked as a Certified Nursing Assistant in memory care, hospice, intensive care, hospital, and assisted living settings. Kathryn is drawn to medicine as both an art and a science and finds inspiration from walking in nature, reading about powerful ideas, and especially listening to and playing music. kathryn.b.schwarzmann@kp.org

Seyedin, Steven

Dr. Seyedin is a radiation oncologist at UCI who focuses on the treatment of genitourinary cancers with radiotherapy. Before joining UCI, he conducted data analysis for multiple early-phase cancer trials investigating novel therapeutics and radiation dose escalation. His research throughout residency focuses on the role of stereotactic body radiation therapy (SBRT) in a variety of settings, such as rectal, sarcoma, and esophageal cancers. Continuing this research path, his primary career objective is to conduct clinical-translational research exploring novel approaches to improving the therapeutic index of radiation therapy. Additionally, he conducts research focusing on socioeconomic

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Seymann, Gregory

Gregory B. Seymann, MD, is a board-certified internal medicine physician who specializes in caring for hospitalized patients. Dr. Seymann is vice chief of Hospital Medicine at UC San Diego School of Medicine, where he serves as a professor and instructs medical students, residents, and fellows. His special interests include community-acquired and healthcare-acquired pneumonia, antibiotic stewardship, performance measurement for hospitals and physicians, systems-based quality improvement, and high-value healthcare. Dr. Seymann is a member of the UC San Diego Patient Safety Committee and various divisional committees, including the Executive Committee. He is committed to inspiring future physicians to embrace high-value healthcare through involvement in various teaching and mentorship programs. gseymann@health.ucsd.edu

Shah, Viraj

Viraj Shah is an ex-HLA scholar, Akindolie Medical Scholar and penultimate-year medical student at Imperial College London, having graduated first class honours with multiple prizes during his intercalated degree in Healthcare Management at Imperial College Business School. He holds a particular passion for innovation, leadership and research with interests spanning the intersection of surgery, medical technology, medical education and global health. Viraj has over 15 in-press publications with his research having been previously presented internationally, awarded multiple prizes and published in several high-impact-factor academic journals. He is a steering group member of various medical education research groups based in London, and holds honorary research fellowships in the AI/ML in Medical Education space. Viraj is committed to implementing innovation and equity in novel medical education approaches, and is passionate about data science's role in enhancing versus redefining medical education. Moreover, he is an advocate for medical student involvement in medical education policymaking, and the utility of learning teaching and education skills during medical school. He has delivered countless voluntary medical education lectures and projects to enhance the student experience across the UK, for which he was awarded a MedAll Exceptional Educator Prize amongst several local prizes.

Shamith, Simran

Simran Shamith is a second year medical student at Drexel University College of Medicine (DUCOM). She graduated from Drexel University with a Bachelor's degree in Biological Sciences and minors in Psychology, Neuroscience, and Business Administration. She has been working with the Assessment Committee supported by a Macy Grant at Drexel to develop tools to combat racism and bias. This sparked her interest in assessment within medical education. Simran presented at Drexel's Academic Research conference to leaders and pioneers in the field of education. As a future physician, Simran hopes to pursue orthopedic surgery and thus has conducted research with the Rothman Orthopaedic Institute. Outside of research she is involved in leadership of many mentorship clubs at DUCOM including Women in Surgery and DUCOM Mentors, Tutors, and Coaches. sfs67@drexel.edu

Shanina, Elena

Dr. Shanina is a Neurology Clerkship Director at the University of Texas Medical Branch John Sealy School of Medicine. She is an Associate Professor of Neurology and is board-certified in Neurology, Neuromuscular Medicine, and Electrodiagnostic medicine. Her expertise includes clinical education and the development of new teaching and assessment tools for medical students, residents, and fellows. She served as a question writer for self-assessment exams at the AANEM and StatPears. She serves as a faculty adviser for the student interest group in Neurology. elshanin@utmb.edu

Shaw, Christina

Christine Shaw, MD, is a surgeon/educator/scientist with a focus on Surgical Oncology and Education. She is devoted to educating surgical residents and medical students and am actively studying the utilization of simulation in surgical education. As the surgical clerkship director, she is working to mitigate bias in assessments and innovate means to teach. Dr. Shaw's education/training include: The Florida State University, Tallahassee, FL BS Biology 1999; Drexel University,

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Sherrill, Caroline

Caroline Sherrill is a 3rd year pediatric resident completing residency training through Loma Linda University's pediatric Primary Care Track, in which she has the unique opportunity to receive training at both Loma Linda University Children's Hospital and Riverside University Health System. Caroline is originally from San Diego, CA, and completed her medical education in Chicago, IL at Rush Medical College. Upon completion of residency, she intends to practice in pediatric Primary Care in Riverside, CA. carosherrill@gmail.com

Shiatis, Vishal KA

Vishal Shiatis is a Foundation Year 2 trainee working in London. Throughout medical school, she was heavily involved with facilitating and providing teaching to fellow undergraduates at King's College London (KCL), leading to a faculty award for 'Most Innovative Teacher' and an award for outstanding achievement and contribution to the KCL community. A core focus of her teaching lies in decolonizing the medical school curriculum - culminating in developing and running two simulations for over 300 medical students at a Royal College of General Practitioners training day. Her contribution to teaching during her undergraduate period was also recognized on a national scale when she became an Associate Fellow of the Higher Education Academy and received a runners-up prize for the General Medical Council Medical Student Professionalism competition in 2021 for creating an original online teaching resource. This has since translated into her taking up several postgraduate leadership positions within the Junior Doctor Education Committee at Princess Royal University Hospital, where she facilitated and led core teaching programs for a variety of medical students over different years. She spearheaded "Virtual On Call" sessions and was the co-leader of "Bleep Week"- a core component of the final year medical curriculum. Her work on these schemes resulted in recognition from the Dean of KCL Medical School and an award from the South London medical deanery. vishal.shiatis1@nhs.net

Shih, Evan

Dr. Evan Shih graduated with a BS in physiology from UCLA and was excited to continue his medical education at the David Geffen School of Medicine at UCLA. At DGSOM, he discovered his passion for medical education. Dr. Shih knew a career in academic hospitalist medicine would allow him to continue working with the next generation of medical trainees, students, and residents. He completed his residency in internal medicine at the UCLA Medical Center and was selected as a Medicine Chief Resident in 2019. He now works as an Assistant Clinical Instructor of Medicine in the UCLA Hospitalist Cohort. When not attending the inpatient wards teams at Santa Monica, Dr. Shih works as a core simulation instructor for the IM residency and as a proceduralist on the inpatient procedure service. His interests include medical education, clinical reasoning, high-value care, and quality improvement. ejshih@mednet.ucla.edu

Shillingford, Nick

Nick Shillingford is a Pediatric Pathologist at Children's Hospital Los Angeles and Clinical Associate Professor of Pathology at Keck School of Medicine of the University of Southern California. He also serves as Director of the Pediatric Pathology Fellowship Program and Director of Education in Pediatric Pathology for rotating residents, medical students and observers at CHLA. Dr. Shillingford who is originally from the Commonwealth of Dominica in the Caribbean, graduated from the Faculty of Medical Sciences of Sancti Spiritus, a branch of the Higher Institute of Medical Sciences of Villa Clara in Cuba. He completed internship at the Port of Spain General Hospital and the Eric Williams Medical Science Center in Trinidad and Tobago. Dr. Shillingford did his residency in Anatomic Pathology at SUNY Downstate in Brooklyn. That was followed by fellowship training in Surgical and Gastrointestinal/Liver Pathology at Brown University/Rhode Island Hospital. His Pediatric Pathology

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Shimanski, Isabel

Isabel Shimanski is a second-year medical student at the University of Utah School of Medicine with a passion for EMS, Emergency Medicine, and Academic Medicine. Isabel's background is in EMS: before pursuing her medical degree, she worked as a paramedic for six years at an EMS agency just outside of Salt Lake City, located in a rural region with urbanized areas. At this agency, Isabel notably developed and coordinated the Peer Support Team and was responsible for coordinating pediatric care and collaborating with EMS for Children to provide pediatric training to the agency. Throughout medical school, Isabel has continued to work in the Emergency Department at the University of Utah and teach the EMT and AEMT programs at the University of Utah Center for Emergency Programs. Ultimately, Isabel is passionate about being involved in EMS and medical education as a physician and hopes to mentor EMS providers how she was mentored by her incredible medical directors during her EMS career. isabel.shimanski@hsc.utah.edu

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Rob Short is a third-year internal medicine resident physician at the University of California, San Francisco (UCSF). He is enrolled in UCSF's Health Professions Education Pathway, through which he has gained formal training on curriculum design and evaluation. Rob is a first-generation college student passionate about direct teaching and mentorship. After completing a chief residency at UCSF, he hopes to pursue graduate-level training in medical education. robert.short@ucsf.edu

Siegel, Jennifer

Jennifer Siegel, MD, is a resident at the University of Southern California Psychiatry Residency Training Program. She received her bachelor's degree in psychology from Washington University in St. Louis, completed a Postbaccalaureate Premedical Program at the University of Southern California, and then received her medical degree from the Perelman School of Medicine at the University of Pennsylvania. Her clinical interests include mood and anxiety disorders (particularly OCD), transitional-age youths, and the intersection of art and mental illness. Her research interests include incorporating art and creativity into medical education. jennifer.siegel@med.usc.edu

Simenz, Christopher

Dr. Christopher Simenz is the Associate Director for the MPH and DrPH Programs in Public Health at the Medical College of Wisconsin and an Associate Professor in the Institute for Health & Equity. He has spent the past 20 years collaborating with numerous partners in community-engaged research, policy, and systems change focused on the social determinants of health (SDOH), public and community health, and wellness. Dr. Simenz and colleagues have created and operationalized policy and systems changes focused on equitable health improvement for a broad range of people, from children to senior refugees, with an impact reaching hundreds of thousands of children, adolescents, and families in Milwaukee and SE Wisconsin. He is also engaged in the food and housing insecurity space in Milwaukee. He serves on the Board of Directors of StreetLife Communities, an active outreach program supporting Milwaukee's most marginalized people, and applied public health practice as a Board Member on the North Shore Board of Health. csimenz@mcw.edu

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Kate Smith, PhD, is Associate Professor of Medical Science and Senior Associate Dean of Biology Education. She is a member of the Division of Biology and Medicine leadership council and administrative leader of undergraduate, master's, and doctoral education. With training in infectious disease ecology and biogeography, Dean Smith joined Brown University in 2008. Her scholarship focuses on planetary health and STEM education. Her work has been published in peer-reviewed journals such as *Science*, *Ecology Letters*, *One Health*, and *Conservation Biology*. Dean Smith teaches courses on planetary health to undergraduate and medical students and co-chairs the Planetary Health Curriculum Integration Committee at The Warren Alpert Medical School. She is the recipient of the Dean's Award for Excellence in Undergraduate Teaching, Advising, and Mentoring in the Biological Sciences. She earned her BS in biology from The University of New Mexico and a PhD from the Department of Ecology, Evolution, and Marine Biology at the University of California Santa Barbara. katherine_smith@brown.edu

Smith, Morgan

Dr. Morgan Smith is a current first-year pediatric hospital medicine fellow at Johns Hopkins All Children's Hospital. She completed undergraduate and medical school at Mercer University before moving to St. Petersburg, Florida where she completed residency and a chief year at Johns Hopkins' All Children's Hospital. Her primary focus is on medical education, specifically curriculum design and assessment. Her global mission is to narrow the generational gap within medical education by strengthening pre-existing curricula with new technology and methods. msmit375@jh.edu

Stevens, Maria

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Stokes, Lauren

Lauren Stokes is the director of academic support services at the University of California, Irvine, School of Medicine (UCISOM). In her role, Dr. Stokes oversees learning strategy support for over 450 medical students. She directs ZotUnity, a career advising, wellness, and academic support program, and the peer tutoring program, CLC-MSAT, which employs over 70 student leaders. Dr. Stokes earned her B.A. in Psychology and Communication from California State University, Channel Islands, M.S. in Applied Psychology from the University of Southern California, Ed.D. in Educational Leadership from Concordia University, Irvine, and completed her single-subject teaching credential coursework at California State University, Long Beach. In addition to directing the UCISOM learning services, Dr. Stokes is an adjunct professor within the California State University system. She teaches upper-division courses in research methods and statistics, adolescent development, and parenting psychology. Her research background includes campus climate, increasing post-secondary retention for underrepresented students, and best practices in facilitating medical student learning. lmstokes@hs.uci.edu

Stokke, Jamie

Jamie Stokke MD is a Clinical Assistant Professor of Pediatrics at Children's Hospital Los Angeles, University of Southern California. She is a hematology/oncology physician in the Cancer and Blood Disease Institute (CBDI) specializing in leukemia and lymphoma with a clinical interest in Non-Hodgkin Lymphoma and rare lymphomas. She is the Associate Fellowship Director for the pediatric hematology/oncology fellowship and the Director of Medical Education for the CBDI. Her medical

education interests include faculty development on feedback, feedback and professional development for graduate medical education (GME), and innovative ways to improve wellness for GME. She currently co-leads the hospital AIM work group focused on improving the culture of feedback at CHLA. She chairs the Wellness Committee for hematology/oncology and created the Art in Medicine Curriculum for GME at CHLA. She is currently obtaining her master's degree in Academic Medicine at USC, Keck School of Medicine. Her other interests include her young kids, trying new restaurants, and traveling as much as possible. jstokke@chla.usc.edu

Strohl, Harmonie

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Studebaker, Claudia

The presenter and author, Claudia Studebaker, is a second-year medical student at West Virginia School of Osteopathic Medicine. She is a graduate of The Ohio State University where she received a degree in biochemistry. During her time at Ohio State, Claudia worked with the College of Aerospace Engineering to aid in the development of vaccine delivery for certain tumors using DNA nanotechnology. She also worked extensively in teaching roles within a dance organization on Ohio States campus. Following graduation, she worked in education before beginning medical school. It was during this time she grew in her passion for educating, and this facilitated the pursuit for creating learning resources for fellow medical students. In addition to her work with educational material she also holds the role of co-chair for the Grand Rounds Committee which provides WVSOM medical students an opportunity to hear case presentations from alumni physicians. With this organization she also created a CME event called Lightening Rounds for alumni to attend. In summary, Claudia has the passion and skill to provide students with learning resources that will bring forth success in medical education. cstudebaker@osteo.wvsom.edu

Stumpp, Lauren

Lauren B. Stumpp is a third-year medical student at the University of Pittsburgh School of Medicine. She is interested in pediatrics and medical education. Lauren completed her undergraduate degree at the University of Pittsburgh, where she studied chemistry. Since starting medical school, Lauren has been interested in curricular reform and student wellness. She served as a curriculum committee class representative and the communications chair for the student learning environment committee during her first two years. Since then, she has gotten more involved in curricular quality improvement as a member of the curriculum continuous quality improvement, CCQI, subcommittee and hopes to continue this work in the future. lkb48@pitt.edu

Takeda, Moe

Dr. Moe Takeda is a Pediatric Pathologist and Hematopathologist in the Department of Pathology at Children's Hospital of Philadelphia and Assistant Professor of Clinical Pathology at Perelman School of Medicine at the University of Pennsylvania in Philadelphia. Her primary academic interest is in medical education. She received her undergraduate degree from the University of Colorado Boulder and her medical education from Lincoln Memorial University, DeBusk College of Osteopathic Medicine. Dr. Takeda then completed residency in Anatomic and Clinical Pathology at LAC+USC Medical Center in Los Angeles. She then completed subspecialty fellowships in Hematopathology at the University of Chicago and Pediatric Pathology at Children's Hospital Los Angeles.

Tamarit, Jocelyn

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College of Medicine, where she provides academic support to undergraduate medical students (M1-M4). Ms. Tamarit has earned a bachelor's and master's degree in psychology and has extensive experience with adolescents and young adults in both academic and higher education settings. Previous to her role as a learning specialist, Ms. Tamarit worked as an undergraduate biology academic advisor. jtamarit@fiu.edu

Templeton, Kimberly

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Terrazas, Jesus

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Thomas, Joseph

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Thomas, Kyle

Kyle Thomas is a third-year medical student at California University of Science and Medicine. His research interests include improving access to care for patients who speak English with limited proficiency. He believes that with improved education on providing care to patients with limited English proficiency and higher degrees of language concordance between physicians and patients, underserved communities will have better access to care and health outcomes. Kyle hopes to continue to reduce inequities in health throughout his career. thomask@cusm.org

Thompson, Arianna

Arianna Thompson is excited to submit our abstract: "Developing weight inclusivity in medical curricula through a trauma-informed medical education lens" to the Innovations in Medical Education 2024 Conference. She is a second-year medical student at UCSF, interested in broadly addressing the widespread weight bias within medical education and healthcare. This pervasive issue has profound consequences on patients' experiences, and Arianna hopes to continue investigating the negative impact of weight bias on patient-provider relationships and overall patient wellbeing. She has participated in research on eating disorders and weight bias within medical curricula. She hopes to continue studying these subjects and how they intersect. Her long-term goal is to pursue a career in clinical medicine, with additional emphasis on curriculum development. Arianna believes, "Changing how we teach medicine is the surest way to making lasting change in our interactions with patients." arianna.thompson@ucsf.edu

Thompson, Kade

Kade Thompson is a second-year medical student at the University of Texas Medical Branch at Galveston. He obtained his undergraduate degree in Biochemistry from the University of Texas at Austin and served as an EMT for three years afterward. During this time, Kade decided to return to school. He obtained his Master's in Bioethics from Emory University. Kade realized the separation between the disabilities and healthcare communities and is now an officer of a student organization that hopes to mend the gap between these communities. kaathomp@utmb.edu

Tjong, Elysia

Dr. Elysia Tjong has been involved with health care since her undergraduate career, from volunteering at the hospital and working as a clinical research associate to eventually completing medical school in 2021. She has written several case reports and presented her research in medical school. Since she started my residency in 2021, Dr. Tjong has been interested in interstitial lung disease. While in residency, she completed a QI project to help educate residents on guideline-directed medical treatment for patients with heart failure with reduced ejection fraction. She is looking for more ways to be involved in medical education while in residency. elysijatjong@arizona.edu

Tom, Thomas

Thomas Tom, MD, FACP, is an Associate Professor and the Medicine Clerkship Director at Kaiser Permanente Bernard J. Tyson School of Medicine. Dr. Tom is bridging UME and GME from his career experiences. As a Clinical Professor of Medicine at UCLA's David Geffen School of Medicine, Dr. Tom was the Site Director for the UCLA Medicine M3 Clerkship at Kaiser Permanente Los Angeles Medical Center and served 26 years as a Residency Program Director at Kaiser Los Angeles. He is a Primary Care Internist and former Hospital Medicine Teaching Attending. His academic interest lies in curriculum development and innovations. thomas.y.tom@kp.org

Torres, Ashlynn

Ashlynn Torres is a fourth-year medical student at Kaiser Permanente Bernard J. Tyson School of Medicine applying to psychiatry. She is interested in the intersection of mental health and substance use and how chronic pain management is integrated into medical education. ashlynn.r.torres@kp.org

Treat, Robert

Robert Treat, PhD is an Associate Professor of Emergency Medicine and the Director of the Office of Measurement and Evaluation at the Medical College of Wisconsin (MCW) where he has worked since 1999. Dr. Treat provides consultation to MCW faculty, residents, students, and staff in addressing key evaluation/measurement related questions and is responsible for the analysis and evaluation of educational outcomes data for residents and medical students. Dr. Treat is the Deputy Editor of the Wisconsin Medical Journal and the international journal of Teaching and Learning in Medicine. Dr. Treat served as the chair for the 2021 Generalists in Medical Education annual conference, has served as co-chair for the MCW Innovations in Healthcare Education Research (IHER) annual conference since 2019, and is on the AAMC Central Group on Educational Affairs (CGEA) annual meeting executive committee. He frequently presents his research at the AAMC Learn Serve Lead conference, Association for Medical Education in Europe conference, International Association of Medical Science Educators conference, AAMC CGEA spring meeting and University of Southern California Innovations in Medical Education conference. Dr. Treat is a member of the Society of Directors of Research in Medical Education. Dr. Treat has co-authored over 40 peer-reviewed publications and over 300 peer-reviewed conference presentations. rtreat@mcw.edu

Truong, George

Dr. Truong's interests include advocacy for our most vulnerable populations. As a resident physician, he wants to work toward understanding how to best address the health inequities of Los Angeles both at a policy and individual level, specifically with populations maligned by current political and social structures. geo.truong.md@gmail.com

Truong, Kevin

Kevin Truong first became interested in magic in medical school when he had the opportunity to perform in a magic show for pediatric patients at Shriners Hospital for Children. Knowing that magic had a positive effect on patients, he was interested in exploring the beneficial effects of magic on medical students, specifically their confidence, comfortability, and rapport-building abilities during pediatric clerkship. During his undergraduate career at UC Irvine, Kevin researched with Dr. Sergio Armando Villalta to study the role of regulatory T cell and macrophage interaction in muscular dystrophy. In his histopathology core team, Kevin sliced frozen mice tissue using a cryostat and analyzed clusters of nuclei to assess tissue injury and repair. During his medical school career, Kevin presented his research abstract on social media usage amongst private practice plastic surgeons at the Council of Young Filipinx Americans in Medicine conference. He is currently working on publishing the paper under Dr. Connor Arquette and Dr. Rahim Nazerli. He is also working on several research projects. Under Dr. Damon Meyer, Kevin is studying the role of microhomology in the repair of double-stranded DNA breaks in recombinant yeast cell lines of various DNA base pair lengths and mismatches. Under Dr. David Pai, Kevin assisted in a systemic review examining the prophylactic use of vitamin D to prevent diseases in healthy adults and children. kevin.truong9578@cnsu.edu

Ureste, Peter

Peter Ureste, MD is an Associate Clinical Professor in the University of California San Francisco

Department of Psychiatry and Behavioral Sciences. Clinically, he is an inpatient psychiatrist at Zuckerberg San Francisco General Hospital and Trauma Center. He also serves as the interim site director for residency training. In addition to providing clinical supervision to psychiatry interns on the psychiatric inpatient unit, Dr. Ureste serves as an interim associate director of the UCSF Adult Psychiatry Residency Training Program. He works with medical students as a Bridges coach, director of the professional identity formation curriculum, curricular component liaison in the anti-oppression curriculum initiative, and psychiatry career advisor. Ureste also serves as a core faculty member in the UCSF Latinx Center of Excellence, where he works with Latinx and URM pre-medical and medical students. pureste@gmail.com

Valerio, Jr., Regaldo

Regalado 'Reggie' Valerio Jr. is a certified registered nurse anesthetist (CRNA) at Los Angeles General Medical Center (LAGMC) and the simulation director at the USC Program of Nurse Anesthesia, Keck School of Medicine. Most recently, Dr. Valerio is named as the Advance Practice Nurse of the year and the merit recipient among the CRNAs at LAGMC in 2023. As the director of simulation at USC, Dr. Valerio facilitates laboratory simulations on anesthesia planning, management, and delivery in a safe and controlled learning environment for nurse anesthesia residents. He also provides interdisciplinary simulations at LAGMC for OB-GYN, neurology, ER, and perioperative nursing services. rvalerio@dhs.lacounty.gov

Vargas, Jonathan

Growing up in East LA has greatly impacted Dr. Vargas' decision to pursue medicine. Being from a predominantly Spanish-speaking community showed him the many language and social barriers people in his community faced every day, particularly in medicine. What solidified his decision was seeing his family members suffer from an inability to communicate with the oncologist of a young family member. Since then, Dr. Vargas has made it my mission to serve patients from his community and those alike as a Spanish-speaking physician. Dr. Vargas chose Family Medicine because it is the field where he can have the most significant impact at a community level by focusing on preventing disease and empowering patients. jvarg910@gmail.com

Varma, Ria

Ria Varma is a penultimate year medical student at Imperial College London, with a BSc in Surgical Design, Technology and Innovation. Her interests include Surgery and MedED. Ria is a tireless advocate for shaping student experience and driving change in medical education, she is an academic officer of Imperial College School of Medicine's Student Union where she works closely with faculty to improve academic experience. Beyond this, she is an academic representative for Year 5. She has extensive work experience with international medical education organisation, MedAll, as a support worker for the group. She is a co-founder of the BioRegulatory Systems Crashcourse Series for UK medical students as well as a Teaching Academy Facilitator for MedED's Teaching Academy. She is also a President's Ambassador for Imperial College London. She previously held the role of NICE Student Champion national lead, where she inspired students to use evidence search in learning and applying content pre-clinically and clinically and co-ordinated a network of university representatives. ria.varma19@imperial.ac.uk

Veet, Laure

Dr. Veet is an internist with 25 years of leadership and medical education experience, including eight years of national program experience in the Veterans Health Administration Headquarters. laure.veet@yahoo.com

Venderova, Katerina

Dr. Venderova is an Associate Professor at the Department of Biomedical Science of the Kaiser Permanente Bernard J. Tyson School of Medicine (KPSOM) in Pasadena, California. She serves as a course director of the Scientific Basis of Healthcare in the Integrated Science course of the second-year curriculum. She is also responsible for the development, implementation, and instruction of KPSOM's integrated case-based learning curriculum. Her interests include but are not limited to

equity, inclusion, and diversity in medicine, integration in medical education, competency-based education, and leadership development. katerina.x.venderova@kp.org

Vergara Escudero, Enrique

Dr. Enrique Vergara Escudero is a dedicated medical professional with a Doctorate in Medicine from Pontificia Universidad Javeriana Cali, Colombia. Currently, he is a Postdoctoral Research Associate at the University of Minnesota's Department of Anesthesiology, focusing on Cardiothoracic Anesthesia. Enrique's research interests encompass medical simulation using mixed realities and learning assessment via eye-tracking technology. He has held significant research positions, notably with the INCOV-19 group during the COVID-19 pandemic and the Toxicogenomics & Toxicogenetics group at Pontificia Universidad Javeriana Cali. Enrique's scholarly contributions include peer-reviewed publications on topics ranging from SARS-CoV-2 infection among healthcare workers to the use of VR simulation in medical training. Enrique's commitment to medical education is further highlighted by his teaching roles, including his current position with the Cardiothoracic and Vascular Education Collaboration (CVEC) at the University of Minnesota. He is affiliated with the Colegio Medico Colombiano, the American Society of Anesthesiologists, and the American College of Physicians. Recognized for his excellence, Enrique was awarded the Comprehensive Medical Intern Award in 2022 by his peers at Pontificia Universidad Javeriana Cali. everesc8@umn.edu

Villars, Chloe

Chloe Villars is a second-year medical student at the University of California, Irvine, School of Medicine (UCISOM). She completed a Bachelor of Science in Biological Sciences at California Polytechnic State University, San Luis Obispo, in 2019. She spent her gap years before medical school volunteering for her county's Medical Reserve Corps during the COVID-19 pandemic and working as an ER technician. Chloe has a passion for teaching and community service. At UCISOM, she serves as the vice president for CC to MD/DO, educating and mentoring community college students interested in pursuing careers in medicine, and as the vice president for Sex Education Advocates. In her free time, she enjoys volunteering at the student-run Crescent Clinic, where she helps provide care for underserved populations in Orange County and teaches elementary students about health and medicine through Doctors for Diversity. She is also involved in neurology and metabolic disorders research at Children's Hospital of Orange County. In the future, Chloe sees herself pursuing a career in neurology or internal medicine. cbushong@hs.uci.edu

Wadhawan, Nivan

Nivan Wadhawan is a second-year MD/MPH student at the UTMB John Sealy School of Medicine. Their academic background is in neuroscience and Spanish, with a research emphasis on movement disorders and Golgi complex positioning. They are interested in internal medicine and are passionate about community programming, health equity, and holistic care in the disability community. Nivan is currently engaged in projects regarding the health impact of climate change, LGBTQ+ equity in sexual health policies, and post-amputation outcomes in diabetes patients. As such, they hope to carry their passions for environmental health, health policy, food security, and LGBTQ+ health into their future practice. niwadhaw@utmb.edu

Wadhwa, Shruti

Shruti Wadhwa is an MD-MBA student at the University of Louisville (U of L) School of Medicine who is interested in oncology. She received her Bachelor's degree in Cognitive Science with a Neuroscience specialization from Rice University in 2021. Shruti is researching the impact of papillomaviruses on head and neck cancer in collaboration with U of L and Massachusetts General Hospital. She is passionate about advocacy for patients and physicians and health accessibility and is working on her MBA to accomplish those goals. Shruti is also a candidate for a Distinction in Business and Leadership, through which she engages in projects aimed at increasing menstrual health access for schoolgirls in Nigeria and conducting assessments of clinical operations and financial analysis for refugee populations in Louisville. Shruti serves as the Wellness Chair of the Medical Student Council, working with the administration and other students to promote student mental wellness. Lastly, she is the co-president of a student-led biomedical innovation program, Bluegrass Biodesign, an innovation program that works with undergraduate medical students and engineers. As a program participant in

its second year, her team worked to improve incentive spirometry compliance and ease of use. Now, as co-president, she is emphasizing health equity in the program, incorporating community partners, and securing funding to ensure the scalability and sustainability of the program.
s0wadh01@louisville.edu

Wahl, Alexander

Alexander Wahl is a fourth-year medical student at the University of Virginia who is applying to Orthopedics in the Spring. Outside of orthopedics, Alexander has had a strong clinical and research interest in intellectual disability and how to address these disabilities in the medical field and schooling. ajw4zx@virginia.edu

Wang MD, Cassandra

Cassandra Wang MD is a third-year pediatric hematology-oncology fellow at the Cancer and Blood Disease Institute at Children's Hospital of Los Angeles (CHLA), University of Southern California. Her current research focuses on the impact of obesity-associated hyperinsulinemia on chemotherapy resistance in leukemia. Additionally, she has an interest in medical education for residents and medical students. She is currently leading the Art in Medicine Curriculum at CHLA, which started as a pilot program in hematology-oncology and is now being expanded across other pediatric subspecialties, medical students, and faculty. In her free time, she enjoys camping and backpacking in national parks, reading novels, and visiting local farmer's markets. cawang@chla.usc.edu

Wattenbarger, Sara

Sara Wattenbarger, DO, FACEP is a current assistant professor of emergency medicine at University of South Alabama. Since completing her residency training in 2018 at Arrowhead Regional Medical Center in San Bernardino County, California, she has been actively involved in resident education including pursuits in both didactic and simulation training. Her research and innovation interests include leadership skills in resuscitation, CPR and resuscitation quality, behavioral emergencies, and resident wellness and burnout reduction. In her free time, she enjoys spending time with her husband Chris, their very active toddler son and three very spoiled dogs, as well as hiking, hunting for unique thrift store finds, completing escape rooms, and reading/watching anything true-crime related. Her Myers-Briggs type is INFJ. slwattenbarger@gmail.com

Weisman, Annie

Dr. Anne Weisman is the Director of Well-Being and Integrative Medicine with the Kerkorian School of Medicine at UNLV and an Associate Professor of Medical Education. She developed a wellbeing and integrative medicine curriculum and workshops for the medical students, faculty, and residents. Dr. Weisman earned her BA, MPH, and PhD degrees from the University of Nevada, Las Vegas. She spent 13 years caring for people living with HIV/AIDS, as well as volunteering and working in hospice. Dr. Weisman is trained and certified and on faculty with the Center for Mind Body Medicine. She uses many of these modalities and approaches in her work and community. She has taught Mind Body Medicine in the coroner's office, with police, fire, first responders, medical students, residents, high school and elementary school students, and throughout the community. anne.weisman@unlv.edu

Werbinski, Janice

Dr. Werbinski has been instrumental in advocating for change in medical academia which is targeted to change the way that we deliver healthcare to women, taking into consideration the many ways in which women, their health, and their needs differ from men's. Board-certified in ObGyn, she practiced gynecology, minimally-invasive surgery, and women's health in Kalamazoo, Michigan for 40 years, retiring from clinical practice in 2013. During those clinical years, she served as Medical Director of Bronson Women's Center, Borgess Women's Health, and the YWCA (SANE) Sexual Assault Center. She created and taught the curriculum for the Advanced Women's Health Track in the Internal Medicine Residency at Kalamazoo Center for Medical Studies for 10 years. She is now Clinical Associate Professor Emerita at Western Michigan University Homer Stryker MD School of Medicine, teaches sex and gender specific medicine to medical students and residents there, and has written an iBook and several peer-reviewed articles on the topic. She has advocated for endowed chairs in Women's Health and/or Sex and Gender Specific Medicine for many years. She is the Founding

Executive Director of the Sex and Gender Health Collaborative (SGHC), now an initiative of the American Medical Women's Association (AMWA), and she served as the 2021 President of AMWA. For over 10 years, she has worked with this Collaborative in its efforts to infuse concepts of sex and gender specific medicine into medical and interprofessional curricula. With Dr. Deborah Kwolek, she co-chairs the SGHC Student Mentorship Committee, leading a project with over 200 international premedical and medical students who are creating peer reviewed educational toolkits with the goal of introducing these into curricula. These kits consist of Fact Sheets, You Tube Videos, Social Media Posts, and more. This group has partnered with over 8000 AMWA student members, working to distribute these materials and timely clinical textbooks to medical school deans and curriculum leaders. They have presented this project at over 25 national and international conferences, winning top recognition at some. Through the interactive presentation at the 2024 Keck USC "Innovations in Education" conference, she and 3 other leaders of the SGHC will explain this project more fully, describe 4 sex and gender-based curriculum Tenets, share some educational tools, and guide attendees on ways to thread these concepts through already established curricula in their individual institutions. We will also offer opportunities for interested attendees to join our project as curriculum creators, researchers, and peer reviewers. dr.janwerbinski@gmail.com

Wilhelmi, Melissa

Melissa Wilhelmi holds a bachelor's degree in Elementary Education and Spanish from Michigan State, as well as a Juris Doctorate and master's degree in Latin American Studies from the University of Wisconsin. She is a bilingual teacher at heart, and former school administrator and immigration attorney. Melissa currently works for a leading educational non-profit while completing her Ph.D. in Language, Literacy, and Culture at the University of Illinois at Chicago. Her research interests include the sociolinguistic impact of authentic Spanish texts vs. translations in dual language program settings. mwilhe5@uic.edu

Willoughby, Denise

Denise Willoughby is a first year medical student at Charles Drew University. denisewilloughby@cdrewu.edu

Womeodu, Robin

Robin Womeodu, MD, FACP, FACHE served as the chief medical officer for Methodist University, the flagship hospital for Methodist Le Bonheur Healthcare, for 17 years, and in 2021, transitioned to the chief academic officer to lead the healthcare system's office of Medical Education and Academic Affairs. Her role is to strengthen academic partnerships and medical student, residency, and fellowship programs. She is a system ACGME Designated Institutional Official and program director for Internal Medicine residency. Her professional priorities have centered on promoting high-reliability systems of care that prioritize patient safety. Service in the National Health Service Corps in the Mississippi Delta promoted a career-long interest and expertise in addressing health and healthcare disparities and related social determinants of health. Board-certified in Internal Medicine, she earned her doctorate in Medicine from Washington University, St. Louis, and completed her Internal Medicine residency at the University of Pittsburgh. robin.womeodu@mlh.org

Wong, Ivan

Dr. Ivan Wong is an orthopaedic surgeon and professor at Dalhousie University. He is the president of the Arthroscopy Association of Canada, is program director of the Arthroscopy, Sports Medicine and Joint Preservation fellowship program at Dalhousie. He has published over 150 peer-reviewed articles, manuscripts and book chapters over the last decade in the most recognized journals in orthopaedics. He has instructed 40 international surgeons and has travelled internationally to teach the Arthroscopic Anatomic Glenoid reconstruction, a technique he developed to advance the field of arthroscopic sports surgery. iw@drivanwong.com

Wright, Erika

Erika Wright holds a PhD in English from the University of Southern California. She has appointments as a Lecturer in the English Department (University Park Campus) and as an Associate Professor of Medical Education at KSOM. She is also the Associate Director of the HEAL (Humanities, Ethics, Art

and the Law) program and the Narrative Medicine MS Program at Keck School of Medicine at USC. She teaches a number of narrative medicine and literature courses and has published on health and disease, graduate education, medical professionalism, and the Victorian novel. ewright@usc.edu

Wroblewski, Mary Beth

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Wu, Laura

Dr. Wu is an Associate Clerkship Director at the University of Texas Medical Branch John Sealy School of Medicine. She is an Associate Professor of Neurology, a board-certified Neurologist, and Director of the Movement Disorders program. Dr. Wu teaches didactic courses and supervises trainees in the clinical environment. She is passionate about mentoring medical students and residents. ljwu@utmb.edu

Wu, Velyn

Velyn Wu, MD, FFAFP, CAQSM, is an assistant clinical professor in the Department of Community Health and Family Medicine at the University of Florida College of Medicine. Dr. Wu attended medical school at the University of South Florida College of Medicine. She completed her family medicine residency training and fellowship in Primary Care Sports Medicine at Halifax Health Family Medicine Residency and Sports Fellowship in Daytona Beach, FL. Dr. Wu completed the Keck School of Medicine of the University of Southern California Master of Academic Medicine program in August 2021. Before her current position, she was the assistant director of sports medicine and core faculty at Lynchburg Family Medicine Residency in Lynchburg, VA, from 2014 to 2019. Dr. Wu worked in a community private practice from 2011-2014 in Jacksonville, FL, where she maintained a broad scope of practice, providing care to patients of all ages, including minor office procedures. Dr. Wu also provided care at the Bethune-Cookman University Student Health Clinic (2010-2011) and the Halifax Health Emergency Room (2009-2011). Dr. Wu has served as a team physician for community and professional sports teams, including youth leagues, high schools, colleges and universities, USA boxing, and Minor League Baseball. She has led community initiatives, including a weekend free sports injury evaluation clinic (2012-2014) and a food prescription and nutrition education program with Lynchburg Grows, a community farm (2017-2019). wuvelyn@ufl.edu

Yacoe, Morgan

Morgan Yacoe, BFA Sculpture VCU 2010, MFA Sculpture UF 2020, is Adjunct Assistant Professor, College of the Arts, University of Florida. She is currently an artist, educator, and researcher at the University of Florida. She has worked in the field of surgical simulation for 13 years Morgsn is also Adjunct Assistant Professor, Santa Fe College and Research Coordinator II, Center for Arts in Medicine, University of Florida, Gainesville, FL. morganyacoe@ufl.edu

Yan, Matthew

Matthew J. Yan is a dedicated advocate for self-acceptance and empowerment within the A-Team Med initiative. He is pursuing his medical education at the UCLA David Geffen School of Medicine and is a graduate of Boston College. Matthew Yan envisions a world where conversations about Asian American identity and the diverse experiences within the Asian American community are not only accepted but actively encouraged. Within the A-Team Med project, he serves as a compelling voice dedicated to amplifying underrepresented narratives and empowering Asian Americans to reclaim and author their stories. Driven by his personal experiences and aspirations, Matthew is committed to providing unwavering support to those who may have felt marginalized or overlooked within the Asian American community. His ultimate goal is to empower individuals to realize their fullest potential, embrace their genuine identities, and rewrite the narrative of Asian American experiences. In addition to his dedication to empowerment and advocacy for Asian American voices, Matthew finds joy in a range of pursuits. Whether it is maintaining an active lifestyle through workouts, immersing himself in literary worlds through reading, embracing leisurely flaneur activities, or staying attuned to emerging streetwear trends, he approaches life with enthusiasm and an open mind. matthewyan@mednet.ucla.edu

Young, Nick

Dr. Young is a clinical assistant professor for the Wake Forest School of Medicine at Carolinas Medical Center in Charlotte, NC. He is a proud graduate of the West Virginia School of Medicine who completed a combined residency in Internal Medicine and Pediatrics at Charleston Area Medical Center in Charleston, WV. After finishing residency, he served as the Associate Program Director for the same MedPeds program and the Internal Medicine Clerkship Director for the Charleston Campus of WVU SoM. Since moving to Charlotte, Dr. Young has practiced as an academic hospitalist focusing on UME. He is the Inpatient Medicine Clerkship Director and the Medical Decision-Making thread director for the Charlotte Campus of WFSOM. nicholas.r.young@atriumhealth.org

Yu, Allison

Allison Yu, MD, is a second-year pediatric resident at Children's Hospital Los Angeles and a member of our program's Education Track. The CHLA Education Track prepares residents for careers in academic medicine by providing training in teaching skills, leadership, and medical education scholarship. As part of this specialized track, Dr. Yu designed and led medical student teaching sessions and started my scholarly project, "Evaluating the Correlation between Impostor Phenomenon and Clinical Competency in Pediatrics Residency." Her interest in this work began in medical school, where she helped conduct a longitudinal study examining multiple contributors of resilience across health professions trainees. The study examined 14 components of resilience, incorporating individual determinants (i.e., adverse childhood events, demographic characteristics, impostorism) and institutional factors (i.e., learning environment, social belonging). This work resulted in two publications, "Modelling the Social Determinants of Resilience in Health Professions Students – Impact on Psychological Adjustment" and "Exploring the Relationships Between Resilience and News Monitoring with COVID Distress in Health Profession Students." While attending UC Davis School of Medicine, Dr. Yu also served on the admissions committee and contributed to Davis' ranking as the fourth most diverse medical school in the nation. She continues that work within CHLA's Diversity and Inclusion Committee and with her Education Track project. ayu@chla.usc.edu

Yu, Chelsea

Chelsea is an MS3 at Wayne State University School of Medicine (WSUSOM) in Detroit, MI, with a BS in Molecular, Cellular, and Developmental Biology from the University of Michigan. She became involved in WSUSOM's Learning Community Program and Peer Mentorship Program as an MS1 and quickly grew interested in mentorship and its ability to facilitate growth and development. Chelsea can be reached at chelsea.yu@med.wayne.edu. chelsea.yu@med.wayne.edu

Zagloul, Maie

Maie Zagloul grew up in Milwaukee, WI, and is a third-year medical student at the Medical College of Wisconsin (MCW). Maie obtained an undergraduate degree in Human Communication Disorders from Northwestern University, followed by a Master's in Science at Loyola University School of Medicine. She previously served on the board of directors in MCW's student-led free clinic, the Saturday Clinic for the Uninsured (SCU). She is on the advisory board and leads the Anti-Racism Committee and Research Committee. In her free time, she works with refugee children through her non-profit, Books for Chance. mzagloul@mcw.edu

Zamani, Haniyeh

As a medical student in the WSUSOM Class of 2026, Haniyeh Zamani is committed to addressing healthcare disparities and fostering social justice in the field. She received her Bachelor of Science in Biology from the University of Michigan. Throughout my education and medical training, she has embarked on a journey marked by a passion for research in health equity and global health. Currently serving as a Research Associate at the Opara Health Equity and Justice in Medicine Lab under Dr. Ijeoma Nnodim Opara, MD, Haniyeh is deeply engaged in transformative work at the intersection of medicine and societal wellbeing. Her academic pursuits are driven by a dedication to dismantling barriers to healthcare access, advocating for marginalized communities, and contributing to the broader discourse on global health. She is excited about the opportunities that lie ahead in her medical education and research journey as she strives to make a meaningful impact on the world's health landscape. hzamani@wayne.edu

Zapata, Geny B.

Dr. Zapata is the Director of Behavior Health in the Adventist Health White Memorial Family Medicine Residency Program. Dr. Zapata earned her Doctorate in Clinical-Community Psychology from the University of La Verne and is a licensed psychologist in California. Dr. Zapata completed a two-year American Psychological Association (APA) accredited fellowship in Behavioral Medicine and In-patient Psychiatry at Harbor-UCLA Medical Center and an APA accredited internship at Children's Institute Incorporated. Dr. Zapata is a CAPIC/MHSA grant recipient for her work with underserved populations. Additionally, she serves as a member of the board at the Reiss-Davis Graduate School and is the chair for the Academic Affairs Committee for the institution. She has worked in hospital, clinic, and community settings providing culturally and linguistically appropriate mental health services to populations of diverse backgrounds. She provides clinical supervision, consultation, and education to doctoral and master level medical and mental health providers. geny_zapata@yahoo.com

Zhao, Annie

A second-year medical student at the Wayne State University School of Medicine, Annie Zhao has a commitment for service and caring for the underserved. As a board member of two of the largest student-run free clinics at Wayne, she has actively incorporated the social determinants of health into daily care, striving to deliver longitudinal and holistic care through research and clinical practice. She has also conducted research to improve pre-health student education and mentorship, with the goal of improving the learning experience of aspiring medical students at student-run clinics. Aside from medical education, her other research interests include integrating telemedicine into Ophthalmology and vaccination behavior. hl8580@wayne.edu

Zhao, Jasmine

Dr. Jasmine Zhao is a first-year radiology resident at the UCI Medical Center. As a southern California native, she completed her undergraduate studies in Molecular Biology and Biomedical Research at UCLA. Then, Dr. Zhao began her medical training at the Keck School of Medicine of USC. She completed a Transitional Year at the Riverside Community Hospital before starting radiology. With multiple publications addressing disparities in clinical outcomes, Dr. Zhao is also passionate about initiatives to improve diversity, medical and resident mentorship, and medical education. jasminz2@uci.edu

Zhu, Marissa Mengdi

Dr. Zhu holds a Bachelor of Arts degree in Elementary Education from Oakland University and a Master of Arts degree in New Media and New Literacies from the University of Michigan. She received her doctoral degree in Educational Psychology and Technology from Michigan State University. Dr. Zhu's research publications appear in the Journal of Computers in Mathematics and Science Teaching, Teaching Learning for Effective Instruction, and Intercultural Education, and center on (1) leveraging digital technologies to support curricular innovations in teaching and learning, (2) applying video-based cases to improve professional noticing, and (3) studying undergraduate students' use of self-regulated learning strategies to support intercultural competence. Dr. Zhu plans to continue her scholarly agenda in academic medicine, examining the impact of Students as Teachers' (mSAT) programming on medical students' professional competencies. Dr. Zhu's research centers on three main strands: Creation of a robust and scalable model for Medical Students as Teachers (mSATs) programming: This endeavor aims to develop a sustainable system that integrates a competency-based approach with micro-credentialing and online learning modules. The model is designed to be adaptable for large institutions like WSUSOM, emphasizing the systematic development of teaching competencies in medical students that align with the curriculum objectives. Investigation into the influence of Student. marissa.zhu@wayne.edu

Zhuravlova, Iuliia

Iuliia Zhuravlova, MD, PhD, graduated from Luhansk State Medical University (LSMU) (Ukraine). After that, she worked as an assistant professor in the Department of Operative Surgery and Clinical Anatomy at LSMU. While at LSMU, Dr. Zhuravlova earned a PhD degree in Human Anatomy (2011), and in 2012, she was appointed Vice Dean of international students. In 2014, Dr. Zhuravlova joined the Department of Anatomical Sciences at Trinity School of Medicine (St. Vincent and the

Grenadines), where she served as Chair of the Research committee in 2015, was promoted to the rank of Full Professor in October 2020 and in January 2022 became the Chair of the Department of Anatomical Sciences. Dr. Zhuravlova joined Mercer University School of Medicine in April 2022 as an Associate professor of Anatomy and Embryology in the Department of Biomedical Sciences.
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Zimmer, Samantha

Samantha Zimmer is a second-year medical student at UC Riverside School of Medicine. She completed her undergraduate education at UCLA, earning a Bachelor of Science in Biological Sciences and a minor in Disability Studies. She also obtained a Master's of Science in Physiological Science at UCLA prior to attending medical school. Her interests include community-based research, Disability advocacy, and improving medical education. She plans to pursue a career in Pediatrics.
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Keck School of Medicine of USC

◆ Course Overview and Objectives ◆

Innovations in Medical Education 2023 Online Conference

Course Description

The 20th annual Innovations in Medical Education (IME) Online Conference joins together a growing community of educators, leaders, scholars, and learners working together to promote change through innovation in health professions education. Our goal is to move education in the health professions towards higher levels of excellence and wellbeing. We will provide a forum for sharing innovative ideas and educational innovations related to teaching and learning, leading, mentoring, and wellbeing within health professions education.

In 2023, we will be using Whova as our online conference event platform to provide access to Zoom live streams of all sessions for registered attendees. The twenty-one interactive faculty development conference workshops are designed to enhance participant skills related to teaching, leadership, educational scholarship, professional development, and promotion of wellbeing. Multiple topical oral presentations and poster sessions will provide opportunities in a collaborative atmosphere for dissemination of participant scholarly work, live question and answer sessions, and networking.

All session recordings, handouts, slides, and posters will be available only to registrants throughout and after the conference. Our 2023 keynote speaker is Julie G. Nyquist, PhD, Professor of Medical Education at USC with 45+ years of experience as a Medical Educator, sharing her experiences to inspire others in their own "Thriving as a Medical Educator."

Conference Outcome Objectives

By the end of the conference, participants will be better able to —

1. Utilize evidence-based principles of teaching, leading, mentoring, and educational scholarship in their work within health professions' education.
2. Incorporate techniques for enhancing the learning environment and wellbeing for all participants within their educational setting.
3. Enhance the teaching and assessment of their learners in relation to the six ACGME Core Competencies by adapting the cool ideas and innovations learned about at IME.
4. Incorporate cool ideas and innovations into the development of curricula and teaching at all levels of health professions' education.

CME Accreditation Statement

The Keck School of Medicine of USC is accredited by the Accreditation Council for Continuing Medical Education (ACCME) to provide continuing medical education for physicians.

Credit Designation

The Keck School of Medicine of the University of Southern California designates this live activity for a maximum of *14 AMA PRA Category 1 Credits*[™]. Physicians should claim only the credits commensurate with the extent of their participation in the activity.

Disclosure Statement

The CME content included in this activity is non-clinical and not related to any ACCME defined ineligible company. Therefore, all course directors, faculty speakers, CME planners and moderators have no financial relationships with any ineligible companies to disclose.

Keck School of Medicine of USC

◆ Core Competencies ◆

Innovations in Medical Education 2023 Online Conference

The American Board of Medical Specialties (ABMS) and the Accreditation Council of Graduate Medical Education (ACGME) have embarked on a joint initiative to quantify and evaluate a set of 6 physician core competencies by which the individual physician will be measured for Residency Certification, Board Certification and more recently, Maintenance of Certification (MOC).

It is the intent of the Office of Continuing Medical Education at the Keck School of Medicine of USC to develop our CME activities in the context of desirable physician attributes.

The following are a list of Core Competencies that will be covered in one or more of the presentations at this conference.

- **Patient Care** that is compassionate, appropriate, and effective for the treatment of health problems and the promotion of health.
- **Medical Knowledge** about established and evolving biomedical, clinical, and cognate (e.g. epidemiological and social-behavioral) sciences and the application of this knowledge to patient care.
- **Practice-Based Learning and Improvement** that involves investigation and evaluation of their own patient care, appraisal and assimilation of scientific evidence, and improvements in patient care.
- **Interpersonal and Communication Skills** that result in effective information exchange and teaming with patients, their families, and other health professionals.
- **Professionalism**, as manifested through a commitment to carrying out professional responsibilities, adherence to ethical principles, and sensitivity to a diverse patient population.
- **Systems-Based Practice**, as manifested by actions that demonstrate an awareness of and responsiveness to the larger context and system of health care and the ability to effectively call on system resources to provide care that is of optimal value.

Keck School of Medicine of **USC**
Office of Continuing Medical Education

**CULTURAL AND LINGUISTIC COMPETENCY IN CONTINUING MEDICAL
EDUCATION POLICY**

INTRODUCTION:

The Accreditation Council of Continuing Medical Education (ACCME) expects accredited providers to operate business and management policies and procedures of their CME program so that their obligations and commitments are met. As part of this accreditation requirement, the ACCME expects that accredited providers located in California will be in compliance with all applicable California state laws regarding continuing medical education delivered in California. CA A.B. 1195 requires that cultural and linguistic competencies are incorporated into the formulation and planning of Continuing Medical Education (CME) programs.

The Keck School of Medicine of the University of Southern California Office of Continuing Medical Education incorporates cultural and linguistic competencies in the formulation and planning of Continuing Medical Education (CME) courses in order to maintain, develop, or increase the knowledge, skills, and professional performance that a physician uses to provide care, or improve the quality of care provided for patients.

POLICY:

Educational activities should include, but are not limited to, the following criteria:

1. Scientific or clinical content with direct bearing on the quality or cost-effective provision of patient care, community or public health, or preventive medicine;
2. Quality assurance or improvement, risk management, health facility standards, or the legal aspects of clinical medicine;
3. Bioethics or professional ethics;
4. Strategies to improve the physician-patient relationship.

A.B. 1195 provides for three ways to comply with the law:

1. Address cultural competency, a set of integrated attitudes, knowledge, and skills that enables a health care professional to care effectively for patients from diverse cultures, groups, and communities. Items to be addressed include linguistic skills, cultural information to establish therapeutic relationships, cultural data in diagnosis and treatment, and cultural and ethnic data applying to the process of clinical care. To comply with the cultural competency requirement, an activity should include one or more of the following:
 - a. applying linguistic skills to communicate effectively with the target population;
 - b. utilizing cultural information to establish therapeutic relationships;
 - c. eliciting and incorporating pertinent cultural data in diagnosis and treatment;
 - d. understanding and applying cultural and ethnic data to the process of clinical care.

2. Address linguistic competency, the ability of a physician to provide patients who do not speak English or who have limited ability to speak English with direct communication in the patient's primary language. To comply with the linguistic competency requirement, an activity may incorporate translation/interpretation resources and/or strategies into activity materials.
3. Provide review and explanation of relevant federal and state laws and regulations regarding linguistic access.

EXEMPTION:

At the activity site, KSOM OCME will provide supporting documents and resources to the physicians, including, but not limited to, handouts, websites, patient education, and local resources. Continuing medical education activities that are exempt from these requirements include those activities solely dedicated to research and other activities that do not contain patient care components (such as leadership).

IMPLEMENTATION / MONITORING:

Documentation of compliance will be presented on the application and/or planning form for the CME activity. This policy will be included in the planning packet for activity directors and faculty so that the program and presentations will comply with the law.

KECK SCHOOL OF MEDICINE OF THE UNIVERSITY OF SOUTHERN CALIFORNIA
OFFICE OF CONTINUING MEDICAL EDUCATION

Cultural and Linguistic Competence Resources for Health Care Providers

State and Federal Law

Federal Civil Rights Act: 42 U.S. Code § 1981 - Equal rights under the law

(a) Statement of equal rights. All persons within the jurisdiction of the United States shall have the same right in every State and Territory to make and enforce contracts, to sue, be parties, give evidence, and to the full and equal benefit of all laws and proceedings for the security of persons and property as is enjoyed by white citizens, and shall be subject to like punishment, pains, penalties, taxes, licenses, and exactions of every kind, and to no other.

(b) "Make and enforce contracts" defined. For purposes of this section, the term "make and enforce contracts" includes the making, performance, modification, and termination of contracts, and the enjoyment of all benefits, privileges, terms, and conditions of the contractual relationship.

(c) Protection against impairment. The rights protected by this section are protected against impairment by nongovernmental discrimination and impairment under color of State law

<https://www.law.cornell.edu/uscode/text/42/1981>

Executive Order 13166

On August 11, 2000, the President signed Executive Order 13166, "Improving Access to Services for Persons with Limited English Proficiency". The Executive Order requires Federal agencies to examine the services they provide, identify any need for services to those with limited English proficiency (LEP), and develop and implement a system to provide those services so LEP persons can have meaningful access to them. It is expected that agency plans will provide for such meaningful access consistent with, and without unduly burdening, the fundamental mission of the agency. The Executive Order also requires that the Federal agencies work to ensure that recipients of Federal financial assistance provide meaningful access to their LEP applicants and beneficiaries.

<http://www.justice.gov/crt/executive-order-13166>

Dymally-Alatorre Bilingual Services Act of California

The Dymally–Alatorre Bilingual Services Act (California Government Code Section 7290 et. Seq.) was signed into law in 1973, to eliminate language barriers that preclude people of our State, who either because they do not speak or write English or because their primary language is other than English, from having equal access to public services. This Act mandates that State and local agencies directly involved in the furnishing of information or the rendering of services to the public must in specifically prescribed situations employ a sufficient number of qualified bilingual persons in public contact positions to ensure the provision of information and services to the public in the language of the non-English speaking people.

<http://www.bsa.ca.gov/pdfs/reports/99110.pdf>

Cultural and Linguistic Competence

Center for Effective Collaboration and Practice

It is the mission of the Center for Effective Collaboration and Practice to support and promote a reoriented national preparedness to foster the development and the adjustment of children with

or at risk of developing serious emotional disturbance. To achieve that goal, the Center is dedicated to a policy of collaboration at Federal, state, and local levels that contributes to and facilitates the production, exchange, and use of knowledge about effective practices.

<http://cecp.air.org/>

National Center for Cultural Competence (NCCC)

The mission of the National Center for Cultural Competence (NCCC) is to increase the capacity of health and mental health programs to design, implement, and evaluate culturally and linguistically competent service delivery systems to address growing diversity, persistent disparities, and to promote health and mental health equity.

<http://nccc.georgetown.edu/index.html>

Limited English Proficiency (LEP)

Limited English Proficiency promotes a positive and cooperative understanding of the importance of language access to federally conducted and federally assisted programs. This site acts as a clearinghouse, providing and linking to information, tools, and technical assistance regarding limited English proficiency and language services for federal agencies, recipients of federal funds, users of federal programs and federally assisted programs, and other stakeholders. <http://www.lep.gov/>

DiversityRx

The purpose of DiversityRx is to improve the accessibility and quality of health care for minority, immigrant, and indigenous communities. We support those who develop and provide health services that are responsive to the cultural and linguistic differences presented by diverse populations. <http://www.diversityrx.org>

National Alliance for Hispanic Health

Mission is to improve the health and well being of Hispanics. The Alliance informs consumers, supports health and human service providers in the delivery of quality care, improves the science base for accurate decision making by promoting better and more inclusive research, promotes appropriate use of technology, insures accountability, advocates on behalf of Hispanics, and promotes philanthropy. <http://www.hispanichealth.org/>

National Center on Minority Health and Health Disparities

The mission is to promote minority health and to lead, coordinate, support, and assess the NIH effort to reduce and eliminate health disparities. NCMHD will conduct and support basic, clinical, social, and behavioral research, promote research infrastructure and training, foster emerging programs, disseminate information, and reach out to minority and other health disparity communities. <http://www.nih.gov/about/almanac/organization/NCMHD.htm>

National Council on Interpreting in Health Care

A multidisciplinary organization based in the United States whose mission is to promote culturally competent professional health care interpreting as a means to support equal access to health care for individuals with limited English proficiency. <http://www.ncihc.org/>

Think Cultural Health

The goal of Think Cultural Health is to Advance Health Equity at Every Point of Contact through the development and promotion of culturally and linguistically appropriate services. Think Cultural Health provides continuing education programs that are designed to help individuals at all levels and in all disciplines promote health and health equity.

<https://www.thinkculturalhealth.hhs.gov/content/continuinged.asp>

Cultural Guides and Assessment Tools

The Provider's Guide to Quality & Culture (not a U.S Website)

The quality of the patient-provider interaction has a profound impact on the ability of patients to communicate symptoms to their provider and to adhere to recommended treatment. It also has an impact on the patient's feelings about being respected (or disrespected) as an individual, a member of a family, and a member of a cultural group.

Cultural competence begins with an honest desire not to allow biases to keep us from treating every individual with respect. It requires an honest assessment of our positive and negative assumptions about others. An organization can help its health care professionals begin to gain cultural competence through formal training, but for most people cultural competence takes consistent individual practice over time.

<http://erc.msh.org/mainpage.cfm?file=4.0.htm&module=provider&language=English&ggroup=&mgroup=>

Guide to Culturally Competent Health Care

Be prepared for the culturally rich and diverse world of healthcare. This concise, easy-to read handbook prepares you to relate to individuals from different cultures. This guide explores 34 different cultures and the issues to be sensitive to; including cultural variations regarding personal space, dietary preferences, communication, symptom management, activities of daily living, and religious and health practices.

<http://site.ebrary.com/lib/uscisd/reader.action?docID=10865357&ppg=1>

Assessing Change: Evaluating Cultural Competence Education and Training

The AAMC commissioned an expert panel to review cultural competence studies that measured learner changes in attitudes, knowledge, and skills. This guide, which is based on the panel's findings, provides these resources for educators and researchers an inventory of the research studies that assess the outcomes of cultural competence education and training, four recommended strategies to advance the research and evaluation, a Cultural Competence Assessment Tool Checklist, along with a guide to using the tool, to help educators and research measure facets of cultural competence in published assessment tools and an overview of three evaluation approaches for curriculum development and evaluation. [Assessing Change: Evaluating Cultural Competence Education and Training](#)

AAMC Tool for Assessing Cultural Competence Training

With increasing diversity in the U.S. population and strong evidence of disparities in health care, it is critically important that health care professionals are specifically educated on how their own and their patients' demographic (e.g., gender, income, race and ethnicity, etc.) and cultural (e.g., language, religion, etc.) factors influence health, health care delivery and health behaviors. In 2000, the Liaison Committee on Medical Education (LCME) introduced two standards about cultural competence that inspired medical schools to introduce cultural competence education into the undergraduate curriculum. TACCT will help in that effort.

TACCT is a self-administered assessment tool that can be used by medical schools to examine all components of the entire medical school curriculum. TACCT enables schools to identify gaps and redundancies in their curricula, which will enable schools to make the best use of opportunities and resources. The TACCT can be used for both traditional and problem-based curricula.

[Tool for Assessing Cultural Competence Training \(TACCT\) - PDF Version](#)

Health Disparities

AMA Racial/Ethnic Health Care Disparities

Recent studies have shown that despite the steady improvements in the overall health of the United States, racial and ethnic minorities experience a lower quality of health services and are less likely to receive routine medical procedures and have higher rates of morbidity and mortality than non-minorities. Disparities in health care exist even when controlling for gender, condition, age and socio-economic status. The American Medical Association provides links for activities to eliminate health disparities, commission to end health care disparities, and research finding and recommendations. As well as an inspirational program for new generation of physicians called Doctors Back to School. <http://www.ama-assn.org/ama/pub/physician-resources/public-health/eliminating-health-disparities.page>

Unequal Treatment: Confronting Racial and Ethnic Disparities in Health Care

The Institute of Medicine researched the extent of disparities in the types and quality of health services received by U.S. racial and ethnic minorities and non-minorities; explore factors that may contribute to inequities in care; and recommend policies and practices to eliminate these inequities. The report from that study, *Unequal Treatment: Confronting Racial and Ethnic Disparities in Health Care*, found that a consistent body of research demonstrates significant variation in the rates of medical procedures by race, even when insurance status, income, age, and severity of conditions are comparable. [IOM Treatment](#)

OMH Minority Population Health Statistics

The Office of Minority Health is dedicated to improving the health of racial and ethnic minority populations through the development of health policies and programs that will help eliminate health disparities. Supported by the U.S. Department of Health and Human Services, OMH provides detailed demographic, language fluency (where relevant), education, economic, insurance coverage and health status information, as well as full census reports on Black/African American Health, American Indian/Alaskan Native Health, Asian American Health, Hispanic/Latino Health and Native Hawaiian & Pacific Islander Health.

[OMH Minority Population Health Statistics](#)

CDC Race & Ethnic Minority Populations and Health Disparities & Inequalities Report 2013

Centers for Disease Control and Prevention's Office of Minority Health and Health Equity (OMHHE) mission is to advance health equity and women's health issues across the nation through CDC's science and programs, and increase CDC's capacity to leverage its diverse workforce and engage stakeholders toward this end. Goals are in health equity, women's health, diversity & inclusion, organizational capacity. Plus visions of a world where all people have the opportunity to attain the best health possible.

<http://www.cdc.gov/minorityhealth/populations.html>

[CDC Health Disparities and Inequalities Report – United States, 2013](#)

HHS Action Plan to Reduce Racial and Ethnic Health Disparities

The *HHS Action Plan to Reduce Racial and Ethnic Health Disparities* outlines goals and actions HHS will take to reduce health disparities among racial and ethnic minorities. With the HHS Disparities Action Plan, the Department commits to continuously assessing the impact of all policies and programs on racial and ethnic health disparities. It will promote integrated approaches, evidence-based programs and best practices to reduce these disparities. The HHS Action Plan builds on the strong foundation of the Affordable Care Act and is aligned with programs and initiatives such as Healthy People 2020, the First Lady's *Let's Move* initiative and the President's National HIV/AIDS Strategy.

[HHS Action Plan to Reduce Racial and Ethnic Health Disparities](#)

Cultural Knowledge/ Language – Specific Sites

Ethnomed

EthnoMed contains information about cultural beliefs, medical issues and related topics pertinent to the health care of immigrants to Seattle or the US, many of whom are refugees fleeing war-torn parts of the world. <http://ethnomed.org/ethnomed>

The Cross Cultural Health Care Program

The mission of The Cross Cultural Health Care Program is to serve as a bridge between communities and health care institutions to advance access to quality health care that is culturally and linguistically appropriate. We provide resources and training for individuals and institutions with the goal of systems change and a vision that *Healthcare in every Community, every Community in Healthcare*. <http://xculture.org/>

Black/African American Health

Traditional Beliefs: Cultural Competency

http://etl2.library.musc.edu/cultural/traditional/traditional_2.php

OMH Minority Populations: African American Profile

<http://minorityhealth.hhs.gov/omh/browse.aspx?lvl=3&lvlid=61>

American Indian/Alaska Native/Native Hawaii

Alaska Native Knowledge Network

ANKN is a resource for compiling and exchanging information related to Alaska Native knowledge systems and ways of knowing. ANKN creates and distributes a variety of publications that assist Native people, government agencies, educators and the general public in gaining access to the knowledge base that Alaska Natives have acquired through cumulative experience over millennia.

<http://www.ankn.uaf.edu/Publications/Knowledge.html>

OMH Minority Populations: American Indian/Alaska Native Profile

<http://minorityhealth.hhs.gov/omh/browse.aspx?lvl=3&lvlid=62>

Asian American/Pacific Islander

Provider's Guide to Quality & Culture Asian American and Pacific Islander Seminars (Not a US Government web site) <http://erc.msh.org/aapi/index.html>

OMH Minority Populations: Asian American Profile

<http://minorityhealth.hhs.gov/omh/browse.aspx?lvl=3&lvlid=63>

OMH Minority Populations: Native Hawaiians and Pacific Islanders

<http://minorityhealth.hhs.gov/omh/browse.aspx?lvl=3&lvlid=65>

Hispanic/Latino/Spanish

USA-Mexico Border Health Cultural Competency Page (HRSA grantee Web site)

<https://www.raconline.org/topics/border-health?topic=cultural%20competency>

The Provider's Guide to Quality and Culture

Designed to assist healthcare organizations throughout the United States in providing high quality, culturally competent services to multi-ethnic populations.

Sponsoring organization: Health Resources and Services Administration.

<http://erc.msh.org/mainpage.cfm?file=1.0.htm&module=provider&language=English>

Traditional Beliefs: Cultural Competency

http://etl2.library.musc.edu/cultural/traditional/traditional_12.php

Hablamos Juntos: Basic Building Blocks of Translation

http://www.hablamosjuntos.org/sm/default.translation_basics.asp

Hablamos Juntos: Interpreter Services

<http://www.hablamosjuntos.org/is/default.index.asp>

Quality & Culture Topic: Working with an Interpreter

<http://erc.msh.org/mainpage.cfm?file=4.5.0.htm&module=provider&language=English>

Quality & Culture Topic: Non-Verbal Communication

<http://erc.msh.org/mainpage.cfm?file=4.6.0.htm&module=provider&language=English>

Legal Mandates for Interpreter Services

http://etl2.library.musc.edu/cultural/interpreters/interpreters_3.php