AAMC

Tomorrow's Doctors, Tomorrow's Cures®

2021 GEA Spring Regional Meeting

Abstract Compendium

Association of
American Medical Colleges

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**Please note both poster presentations and oral presentations are designated under the "Accepted as" field.*

Plenaries

Disabusing DisabilityTM: Demonstrating That DISability Doesn't Mean Inability

Oluwaferanmi Okanlami M.D., M.S
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Disability is regularly neglected in conversations about diversity, equity, and inclusion, yet it is one demographic that we may all identify with one day. Therefore, disability should serve as a means of demonstrating that we are all much more similar than we are different. As a disabled, black, Nigerian immigrant, cis-gender, heterosexual, male, physician, athlete this presentation will talk about the intersectionality between all of those identities, striving to demonstrate that disability is not inability, and encouraging us to allow people to demonstrate what they can do, rather than attempting to limit them based on what they can't. It will end with practical examples of what is being done at The University of Michigan to embody this message.

Wither Whiteness: The (in)Visible Hierarchy in Medical Education

Zareen Zaidi MD, PhD
Professor, General Internal Medicine
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The plenary aims to shed light on the spaces in which whiteness has made its home in medical education. The hierarchies imposed by whiteness manifest as an implicit system of signification and imposition. These assumptions are taken for granted by professionals and students alike and need to be remedied for true progress to be possible. The speaker will introduce the study of Critical Race theory as a basis to analyze such systems and the ways they manifest.

Invited Sessions

GME Solution Generating Session - We Are Better Together

Cathy Jalali, Cecile Foshee, Deborah Simpson, Heather Billings, Karen Marcdante, Vera Luther

During this 60-minute session medical educators and thought leaders from six institutions will facilitate a series of small group discussions and solicit solutions specific to these four GME challenges:

- Residency Recruitment without Step 2 Clinical Skills
- Facilitating faculty development around diversity, equity and inclusion
- Maximizing response rates to well-being assessments
- Supporting professional identity during times of unprecedented change in medical education

We invite you to come share, come learn, and come together as we explore novel and effective ways to meet these challenges within our own institutions.

Promoting 1st Generation College Graduate Success in Medical School: An Online Toolkit of Resources

Alejandra Casillas, April Buchanan, Hyacinth Mason, Jacob Altholz, Lisa Coplit, Mytien Nguyen

GEA UME Section Workshop:
Medical students who were the first in their families to graduate from college bring unique assets to medical institutions. They often possess a track record of highly desirable traits for a physician such as grit, resilience, self-determination, and innovative thinking as well as important insights into the complex health disparities facing the U.S. healthcare system today. However, first generation college graduates (FGCG), and others who come from backgrounds with limited exposure to medicine, may also have unique needs and face challenges that are not always publicly recognized by their schools. For example, cultural capital (what one knows about the culture they are in) and social capital (who one has as their guide) may be in short supply for FGCG students, leaving them encumbered by what researchers have shown to be invisible yet very real barriers that do not affect their continuing generation counterparts. Medical schools may also underestimate the financial constraints that some students face.

Recently, the Association of American Medical Colleges (AAMC) introduced a First-Generation College Student Indicator to allow medical schools to more accurately identify FGCG applicants. In 2019, the Undergraduate Medical Education (UME) Section of the Group on Educational Affairs (GEA) convened a work group to develop an online toolkit of resources for medical schools and mentors to support and celebrate FGCG medical students/trainees.

The purpose of this workshop will be to share resources from the recently published toolkit and to help participants develop strategies for supporting FGCG medical students at their own institutions.

Developing Effective Narrative Evaluations for the MSPE

Donna Elliot

A GSA/GEA Constituent Collaborative Project:
Writing Narrative Feedback for the MSPE convened a working group in early 2019 to consider the current state of narrative feedback used to compose the MSPE. The intent of the working group is to build upon the work done by the MSPE Task Force that developed the 2016 MSPE Guidelines to enhance the transmission of useful information from UME to GME in the residency application process. This work will contribute to move the focus from primarily quantitative measures to more qualitative measures of student performance and to find ways to explicate students' competencies beyond medical knowledge to include patient care, professionalism, communication, practice-based learning and improvement, and systems-based practice.

Practical Approaches to Applying Conceptual & Theoretical Frameworks to Medical Education Research

Andrea Berry, Anna Ciancolo, Beth Bierer, Cayla Teal, Elizabeth Bradley, Heeyoung Han, Janet Riddle, Jorie Colbert-Getz

Continuing Professional Development (CPD): The Engineer to Build the Bridge of Education Continuum

Alice Fornari, Alisa Nagler, Clara Schroedl, Moss Blachman, Nels Carlson

Engage in a growth mindset as applied to CPD. How often have you been perplexed about the terminology: CME vs CPD and its application to the education continuum? Leave this session able to guide others on the importance of CPD to our academic cultures and mission.

Innovations

Innovative Strategies Implemented in the 2020 Online Generalists in Medical Education Conference to Enhance Virtual Meeting Experience

Submission Type: Innovation Abstract
Accepted as: Oral Presentation
Region: CGEA

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Larry Hurtubise, Ohio State University College of Medicine
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Terry Stratton, University of Kentucky College of Medicine
Tasha Wyatt, Medical College of Georgia at Augusta University

Abstract Body:

Objective or purpose of innovation:
The purpose is to examine how conference changes impacted attendee participation.

Background and/or theoretical framework and importance to the field:
For over forty years, The Generalists in Medical Education (TGME) have welcomed medical educators to their annual conference.[1] Due to Covid-19, TGME transitioned to an online conference and implemented several innovative elements to ensure the perpetuation of quality presentations and community building that have been hallmarks of TGME.

Design: Instructional methods and materials used:
The typical TGME conference is 1.5 days with three concurrent sessions in each time slot. The schedule was modified to three hours/day for three days with four concurrent sessions. Daily start times varied to accommodate participants in several time zones. Two Zoom training sessions were created and offered to encourage presenter preparation.[2] TGME members and participants served as hosts and moderators, facilitating the use of engagement tools such as: polls, breakout rooms, and chat discussions.[3] Hosts held practice sessions with presenters to foster a shared understanding of the session plan. One type of oral presentation combined pre-recorded author narrative and visual with real-time presenter Q&A. Two social sessions utilized the Padlet website along with Zoom whiteboards and breakout rooms to create shared products and foster community building.

Outcomes:
Zoom training and practice sessions increased presenter familiarity with program features, which reduced technical problems and improved session coherence. Varying the daily start times made the meeting more accessible to international colleagues, resulting in increased attendance. Member participation as hosts and moderators enhanced presentations, bolstered audience participation, and increased networking opportunities. Formal presentations and informal social sessions both enhanced the healthcare education community of practice.

Innovation's strengths and limitations:
Online preparation of presenters and time-staggering the program was well-received. Integrated chat discussions enriched the academic conversations. Limitations included sparse resources to technically support the concurrent virtual spaces.

Feasibility and transferability for adoption:
The TGME 2020 innovative elements can be adopted by other organizations to enrich online conferences and increase their value to attendees.

References:

1. The Generalists in Medical Education. (2020, November 11-13). 2020 The Generalists in Medical Education annual conference. Retrieved from https://thegeneralists.org/conference/
2. Zoom 101/102 preparation sessions. YouTube.
3. Denise Kay, Cayla R. Teal, Gerald Crites, Andrea Berry, Larry Hurtubise, Elissa Hall, Mohammed K. Khalil "Being There" Building Productive Scholarly Teams across Distance and Over Time JRMC, Vol. 1 , Issue 2(2018) https://pubs.lib.umn.edu/index.php/jrmc/article/view/995/1109

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Implementation of a Quality Improvement Curriculum for residents at The Kresge Eye Institute in Detroit, Michigan.

Submission Type: Innovation Abstract
Accepted as: Oral Presentation
Region: CGEA

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Abstract Body:

Objective or purpose of innovation:
To design and implement a quality improvement (QI) curriculum for ophthalmology resident at Kresge Eye Institute that satisfies ACGME requirements and equips residents with the skills and knowledge required to improve practice.

Background and/or theoretical framework and importance to the field:
The 2020 ACGME guidelines for resident education in ophthalmology state that residents must demonstrate competence in systematically analyzing practice using quality improvement methods. Evidence from the implementation of such programs in other departments have shown that to successfully implement QI projects in residency programs these techniques must be formally taught, and opportunities for resident participation must be multiple and diverse with the ability for residents to benefit from the QI outcomes.

Design: Instructional methods and materials used:
Kresge Eye Institute residents were divided into seven teams of three residents, with one resident from each year per team. Each of these teams will develop, analyze, and implement one QI initiative for the 2020-2021 academic year. In addition to faculty advisor access, teams will be provided protected time in their resident schedule to implement their projects. An April 2021 QI summit will serve as a platform for teams to present a summary of lessons learned and an effectiveness analysis of their initiatives.

Outcomes:
The effectiveness of this new addition to the ophthalmology curriculum at the Kresge Eye Institute will be judged by the five-level Kirkpatrick Pyramid for program evaluation. This will include end of year surveys on resident satisfaction and objectives learned as a result of the new program. The impact of this curriculum will be judged based on the results of the resident team's individual QI initiatives and residents' ability to apply their quality initiatives into clinical practice.

Innovation's strengths and limitations:
Strengths include 100% resident participation and strong institutional support. Limitations relate to time constraints imposed by busy resident schedules.

Feasibility and transferability for adoption:
We hope this program serves as a broadly applicable model for resident QI instruction across specialties throughout the country.

References:

1. Akins RB, Handal GA. Utilizing quality improvement methods to improve patient care outcomes in a pediatric residency program. J Grad Med Educ. 2009;1(2):299-303. doi:10.4300/JGME-D-09-00043.1
2. Bodenheimer T, Dickinson WP, Kong M. Quality Improvement Models in Residency Programs. J Grad Med Educ.

2019;11(1):15-17.
3. Custer PL, Fitzgerald ME, Herman DC, et al. Building a Culture of Safety in Ophthalmology. Ophthalmology. 2016;123(9): S40-S45.
4. Lee AG, Chen Y. Structured curricula and curriculum development in ophthalmology residency. Middle East Afr J Ophthalmol. 2014 Apr-Jun;21(2):103-8.
5. Ma J, Wong BM, Micieli J, et al. Vision to improve: quality improvement in ophthalmology. Canadian Journal of Ophthalmology. 2020;55(2):107-115.
6. Sheldrick JH, Vernon SA, Wilson A, et al. Demand incidence and episode rates of ophthalmic disease in a defined urban population. Bmj. 1992;305(6859):933-936.
7. Teisberg EO, Porter ME, Brown GB. Making competition in health care work. Harvard Business Review. 1994 Jul-Aug;72(4):131-141.

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Learner Expertise and Teaching Potential: Implementation of Student-Led Workshops

Submission Type: Innovation Abstract
Accepted as: Oral Presentation
Region: CGEA

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Gregory Gruener, Loyola University Chicago Stritch School of Medicine

Abstract Body:

Objective or purpose of innovation:
To assess how student expertise and experience can be utilized in medical education.

Background and/or theoretical framework and importance to the field:
As preclinical curricula continue to be adapted to prepare trainees for the changing needs of the healthcare system, the traditional medical student has also evolved (1). At Loyola University Chicago Stritch School of Medicine (SSOM), medical students enter with unique experiences. In the Class of 2023, 48% of students had at least one gap year, 28% held a prior graduate degree, 60% had previous employment in the medical field, and 58% had previous employment in a non-medical field. With the enhanced backgrounds of incoming medical students, institutions can utilize these skills and experiences to involve students in curricular design.

Design: Instructional methods and materials used:
The SSOM Academic Medicine Interest Group designed a Student Curriculum Series (SCS) to provide supplemental education on topics not comprehensively covered in traditional medical education (clinical research, nutrition, public health, health policy, bioethics, cultural competency). Student educators were recruited based on prior experience and responsible for preparing objectives, interactive workshop materials, and educational content for peers. Workshops are being held via Zoom and will continue over six months.

Outcomes:
Nine educators were recruited, and three out of six sessions have been completed to date with 82 students in attendance. Student feedback suggests that students enjoyed the interactive format of workshops and are interested in additional sessions to explore topics further.

Innovation's strengths and limitations:
SCS provides students with an introduction to areas relevant to the role of a physician, but development of more in-depth curricula is needed. SCS presents opportunities for formal incorporation of student expertise in medical education, establishment of continuity in education on these topics through multi-series workshops, and expansion of students' skill sets as the next generation of medical educators.

Feasibility and transferability for adoption:
With increasing and diverse experience among incoming medical students, institutions can utilize student educators to help mitigate existing content gaps.

References:

1. LCME Annual Medical School Questionnaire Part II, 2017-2018.

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Mixed Methods Inquiry into Medical Student Metacognition

Submission Type: Innovation Abstract
Accepted as: Oral Presentation
Region: CGEA

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Abstract Body:

Objective or purpose of innovation:
This sequential mixed methods study investigates the internal and external factors which influence metacognition through focus groups and surveys.

Background and/or theoretical framework and importance to the field:
Metacognition, the knowledge and regulation of thinking, and affiliated factors, such as planning and evaluating, are essential to effective learning.[1] Metacognitive skills and related processes can be taught and developed[1] and have demonstrated correlation with academic performance.[2] Investigating the role of metacognition, associated processes, and diverse internal and external learner traits can inform educational and developmental programming.[3]

Design: Instructional methods and materials used:
In 2019-2020, forty-one medical students identified their interest in focus group participation upon completing these self-reported related surveys: Metacognitive Awareness Inventory and Index of Autonomous Functioning. Data analyzed with SPSS 24.0. Two 60-minute focus group sessions were conducted with M2/3/4 students. Data was transcribed and sorted using the constant comparative method by two research team members. The study is IRB approved.

Outcomes:
Focus group results: Categories included time management and goal setting strategies, personal reflection, engaging in experiences, inherent traits, and peer/professional feedback. An overarching theme to students' perceptions was their perceived autonomy in their success and growth. The value of their experiences and feedback was reportedly discovered and ingrained through self-initiated reflection, and this reflection was often attributed as the sole process required to arrive at new understanding and growth.

Survey results: Autonomy was significantly ($p<0.050$) correlated to overall metacognition ($r=0.7$) and its factors of declarative knowledge ($r=0.6$), conditional knowledge ($r=0.6$), planning ($r=0.6$) and information management strategies ($r=0.5$).

Innovation's strengths and limitations:
Focus group and survey data generated overlapping relational results between metacognition and autonomy. Focus group participants did not include first-year medical students.

Feasibility and transferability for adoption:
A well-informed understanding of the relationship between metacognition and our learners' inherent traits, such as autonomy, and processes, such as reflection, provides insight for programmatic development to improve learner performance and advise intervention strategies.

References:
1. Wijnen-Meijer, M. Preparing students for lifelong learning by means of metacognition. GMS Journal for Medical Education 2020, Vol. 37(5), ISSN 2366-5017.
2. Medina MS, Castleberry AN, Persky, AM, Strategies for improving learner metacognition in health professional education. American Journal of Pharmaceutical Education 2017; 81 (4) Article 78.
3. Han Hong W, Vadivelu J, Daniel EGS, Hiong Sim J. Thinking about thinking: changes in first-year medical students' metacognition and its relation to performance. Medical Education Online 2015, 20: 27561. http://dx.doi.org/10.3402/meo.v20.27561.

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"Stories of Health Disparities": An online asynchronous introductory elective for health profession students

Submission Type: Innovation Abstract
Accepted as: Oral Presentation
Region: CGEA

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Abstract Body:

Objective or purpose of innovation:
To offer an introductory two-week asynchronous elective to encourage medical students to develop an understanding of health disparities, their causes, and possible solutions.

Background and/or theoretical framework and importance to the field:
There is a demonstrated need for health professions to learn about the causes of health disparities so they may become more knowledgeable and compassionate clinicians capable of implementing solutions.1,2 We created an introductory course to engage students on the challenges of health disparities, using inspiring materials in non-medical book, video, and article form.

Design: Instructional methods and materials used:
Two-week asynchronous online course offered to multiple student cohorts throughout the academic year. The course was initially designed with three central components. Under the guidance of CMS faculty facilitators, students 1) Watch instructor selected disparities focused video recordings (e.g. curated TED Talks) and discuss in online forums; 2) Complete a health inequities focused book from the syllabus and discuss in forums; 3) Engage in experiential activities. Students write two detailed reflections on their experiential activities and other course components. During the pandemic, the third component was changed to the review of two current events articles on COVID-19 and health disparities.

Outcomes:
The course has been completed by 125 students in the last 3 academic years. The reviews have been excellent, with students requesting that the material be incorporated into the required curriculum.

Innovation's strengths and limitations:
Strengths: Engaging, relevant material; flexible scheduling
Limitations: Limited timeframe; therefore, not a comprehensive health disparities curriculum.

Feasibility and transferability for adoption:
For healthcare professions educational institutions that do not offer a comprehensive approach to the understanding of health disparities, this course can serve as an easily implementable introduction that inspires students to delve into the sociopolitical context of health inequities. The limited time scope and asynchronous nature was designed for easy incorporation into the fourth year medical student schedule, but also lends to inclusion into any health profession student curriculum.

References:

1. Dopelt K, Davidovitch N, Yahav Z, Urkin J, Bachner YG. Reducing health disparities: The social role of medical schools. Medical Teacher. 2014;36(6):511-517. doi:10.3109/0142159X.2014.891006
2. Vanderbilt AA, Baugh RF, Hogue PA, Brennan JA, Ali II. Curricular integration of social medicine: a prospective for medical educators. Medical Education Online. 2016;21:1-N.PAG. doi:10.3402/meo.v21.30586

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Integrating Communication Skills with Linguistic Minorities into Clinical Skills Curriculum for First Year Medical Students

Submission Type: Innovation Abstract
Accepted as: Oral Presentation
Region: CGEA

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Abstract Body:

Objective or purpose of innovation:
We developed an educational intervention to teach language-related structural barriers to healthcare and the physician's role in communicating with linguistic minorities.

Background and/or theoretical framework and importance to the field:
Over 67 million US individuals speak a non-English language(1), and at least 38% have limited English proficiency(2). Healthcare systems are challenged by language discordance (a mismatch between patient and clinician languages), which leads to poor outcomes(3-4). Despite legal requirements(5), students are often underprepared to navigate language-discordant care due lack of training or pressure to "get by" with limited second-language skills or untrained interpreters(6-8).

Design: Instructional methods and materials used:
We designed a 5-hour session targeting first-year medical students titled "The Role and Impact of Language in Health," implemented as a mandatory session in the Doctoring and Clinical Skills curriculum: 2 hours of pre-readings and a 3-hour live virtual session (1 hour didactic and 2 hour rotating breakouts and debriefing). Breakouts featured 4 case-vignettes highlighting language-related healthcare dilemmas led by trained facilitators.

Outcomes:
Overall, 182 students attended, with 176 (96%) survey respondents. Post-session confidence in caring for linguistic minorities and in explaining the impact of language in health significantly increased compared to pre-survey (all $p<.001$). All respondents reported a plan to apply knowledge gained into clinical practice.

Innovation's strengths and limitations:
Integrating this session within required curricula sends a strong institutional message about the value of communicating with diverse populations and increases potential applicability of results to a wide range of learners. We acknowledge that education about language and health should not involve one session only but rather periodic curricular integration of progressive complexity to cover topics beyond the scope of this introductory training.

Feasibility and transferability for adoption:
Virtual platforms may be advantageous though require logistical support. A clinical skills session to enhance physician preparedness in addressing linguistic structural barriers to care is a feasible educational innovation and may fill a gap in equity-focused communication skills training that can be replicated at other medical schools.

References:

1. Zeigler K, Camarota SA. 67.3 Million in the United States Spoke a Foreign Language at Home in 2018Center for Immigration Studies. Available at: https://cis.org/Report/673-Million-United-States-Spoke-Foreign-Language-Home-2018
2. United States Census Bureau. https://data.census.gov/cedsci/table?q=language&tid=ACSST1Y2019.S1601&hidePreview=true
3. Diamond L, Izquierdo K, Canfield D, Matsoukas K, Gany F. A Systematic Review of the Impact of Patient-Physician Non-English Language Concordance on Quality of Care and Outcomes. J Gen Intern Med. 2019;34(8):1591-1606. doi:10.1007/s11606-019-04847-5
4. Ortega P. Spanish Language Concordance in U.S. Medical Care: A Multifaceted Challenge and Call to Action. Acad Med. 2018;93(9):1276-1280. doi:10.1097/ACM.0000000000002307
5. Improving Access to Services for Persons with Limited English Proficiency, Executive Order 13166, Federal Register, 2000 Aug; Vol. 65, No. 159.
6. Karliner LS, Pérez-Stable EJ, Gildengorin G. The language divide: The importance of training in the use of interpreters for outpatient practice. J Gen Intern Med. 2004; 19:175–183.
7. Cowden, John D., Darcy A. Thompson, Jennifer Ellzey, and Michael Artman. (2012). "Getting Past Getting By: Training Culturally and Linguistically Competent Physicians." The Journal of Pediatrics 160.6: 891–92.
8. Vela MB, Fritz C, Girotti, J. Medical Students' Experiences and Perspectives on Interpreting for LEP Patients at Two U.S. Medical Schools. J Racial Ethn Health Disparities. 2015 May;1-5.

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An Innovative Approach to Global Pathology Education: PathElective.com Experience

Submission Type: Innovation Abstract
Accepted as: Oral Presentation
Region: CGEA

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Abstract Body:

Objective or purpose of innovation:
The COVID-19 pandemic put in-person pathology electives on-hold as departments adapted to education and patient care changes. We created a virtual, free, modular, and high-quality pathology elective website to address the subsequent void.

Background and/or theoretical framework and importance to the field:
Despite its immense importance to all aspects of patient care, pathology is an optional elective in most US medical schools. Due to the COVID-19 pandemic, there was an increased need for virtual pathology experiences.

Design: Instructional methods and materials used:
We created a pathology elective website using SquareSpace.com. Access to the site is free. Educational material was divided into interactive modules broadly divided into the subcategories of anatomic pathology, clinical pathology, and molecular pathology. We invited faculty from across the globe to create (or curate) content. Each module included a pre-test, aims, objectives, videos, and a post-test.

Outcomes:
From June 1, 2020 to October 1, 2020 Pathelective has had 25,467 unique visitors, 34,988 visits, 181,302 pageviews and 4,449 subscriptions from 99 countries across all continents except Antarctica. Countries with highest traffic are the USA (14,682), India (5,210), and the Philippines (2,195). PathElective's Twitter social graph score increased from 63.59 to 89.3 with the addition of 1637 followers. Data from surveyed users (n=177) shows most to be pathology residents (41%). Most subscribers (89%) are committed to a career in pathology. The majority heard of the website via Twitter (55%). In all survey questions surrounding satisfaction and usefulness, a large majority of the users were either satisfied or very satisfied.

Innovation's strengths and limitations:
PathElective is a novel pathology elective that offers a unique opportunity to educate medical students and residents from around the globe and demonstrates high effectiveness and satisfaction among users. The main limitation for equitable access around the globe remains access to the internet.

Feasibility and transferability for adoption:
Under the "for educators" tab we have added practical information regarding how the website content can be adapted to individual departments and electives.

References:
N/A

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MI CARES: An Innovative Online Program to Support Addiction Medicine Certification

Submission Type: Innovation Abstract
Accepted as: Oral Presentation
Region: CGEA

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Abstract Body:

Objective or purpose of innovation:
The Michigan Collaborative Addiction Resources and Education System (MI CARES) program was created to support physicians seeking board certification in Addiction Medicine (ADM). The purpose of this study was to assess physicians' perspectives, use of online modules available in the program in 2020, and perceived effectiveness of learning materials.

Background and/or theoretical framework and importance to the field:
Conservative estimates indicate a current need for 7,500 full-time certified addiction medicine physicians to meet public health demands nationwide. There is need for highly trained physicians to meet demand for prevention and treatment services to address the addiction epidemic.

Design: Instructional methods and materials used:
8 modules (practice pathway, opioids, alcohol, stimulants, nicotine, cannabis, sedatives, club drugs) were designed using the ADM blueprint for board certification. Modules were available starting in January and released thru August with exam dates in October. Modules were built in Articulate 360 and available thru a secured LMS.

Outcomes:
A total of 229 physicians were enrolled in the program from January-October 2020. 59% actively engaged with the online modules, 92% found the modules to be highly valuable for their learning purposes, 91% of physicians completing the Practice Pathway module anticipated using the information learnt towards preparation for board certification. Substance-specific modules received high ratings with 80% expressing confidence in their ability to prevent, assess, manage and treat substance use disorders in their practice.

Innovation's strengths and limitations:
MI CARES provides a flexible model that can be adapted to train students, nurses, NPs, and PAs in ADM.

Limitations: Single study with small sample sizes.

Feasibility and transferability for adoption:
MI CARES is already moving this training upstream into Michigan medical schools as this would be critical in how we train the ADM workforce to treat addiction.

References:

1. Miller, S. C., Fiellin, D. A., Rosenthal, R. N., & Saitz, R. (2019). The ASAM principles of addiction medicine. Philadelphia:

Wolters Kluwer.
2. Scholl L, Seth P, Kariisa M, Wilson N, Baldwin G. (2019) Drug and Opioid-Involved Overdose Deaths — United States, 2013–2017. MMWR Morb Mortal Wkly Rep 2019; 67:1419–1427. DOI: http://dx.doi.org/10.15585/mmwr.mm675152e1
3. Judy McKimm & Paul Kneath Jones (2018) Twelve tips for applying change models to curriculum design, development and delivery, Medical Teacher, 40:5, 520-526, DOI: 10.1080/0142159X.2017.1391377
4. Michigan Department of Health and Human Services (2019). Drug Overdose Deaths in Michigan 2016-2017 [PDF file]. Retrieved from: https://www.michigan.gov/documents/mdhhs/Drug_Overdose_Deaths_MI_2016- 2017_649230_7.pdf
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6. Pappas C.(2019) The Power Of AGILE Instructional Design Approach. eLearning Industry. https://elearningindustry.com/the-power-of-agile-instructional-design-approach. Accessed November 12, 2020.

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Micromanagement in Medical Education: Development of an Instrument

Submission Type: Innovation Abstract
Accepted as: Oral Presentation
Region: CGEA

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Abstract Body:

Objective or purpose of innovation:
Development of instrument exploring (a) the prevalence of micromanagement in Graduate Medical Education (GME), and (b) impact of micromanagement on the individual, team and department.

Background and/or theoretical framework and importance to the field:
Program Directors shared that residents were raising concerns about being micromanaged. Micromanagement is defined as a supervisory style of "hovering" and directly commanding all the details. Business literature reveals a debate about this topic for last few decades, in GME we were only able to identify six publications in PubMed. We think it is appropriate to develop an instrument because (a) the medical education field is very different than the business field and therefor micromanagement might look very different in GME compared to the business world, and (b) we have not found existing instruments in Medical Education that measure prevalence and impact of micromanagement.

Design: Instructional methods and materials used:
For the instrument development we use the steps as suggested Wetzel (2012): Determining what is to be measured, Generating an item pool, Determining the format for measuring (scale), Expert reviewing of initial question pool, Considering inclusion of validation items (6) Administering the items to a development sample, Evaluating the items, and Optimizing scale length.

Outcomes:
Based on expert reviews (methodology (n=3), practitioners (n=12), fellows (n=4)) and think aloud protocols we have adjusted our item-pool and scales. The current questionnaire consists of questions related to the existence of micromanagement (9 items), the possible impact (9 items), and demographics (10 items).

Innovation's strengths and limitations:
The development sample will take place in three institutions and only among residents and fellows. Although the questionnaire will 'just' focus perceptions, this is important, because micromanagement is in the eye of the beholder.

Feasibility and transferability for adoption: Once the questionnaire is validated it should be able to be used by other institutions.

Feasibility and transferability for adoption:
Once the questionnaire is validated it should be able to be used by other institutions.

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Phase 1 Synthesis and Summary: A unique USMLE Step 1 Review course that integrates student self-directed study, flexibility, and wellness

Submission Type: Innovation Abstract
Accepted as: Oral Presentation
Region: CGEA

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Abstract Body:

Objective or purpose of innovation:
In January 2020, Carle Illinois College of Medicine implemented a novel course, 'Phase 1 Synthesis and Summary,' designed to provide holistic academic and wellness support for second-year students preparing for the USMLE Step 1 exam.

Background and/or theoretical framework and importance to the field:
Standard medical school practice includes 4-8 weeks of independent 'dedicated' study time for Step 1 [1] during which students have reported considerable stress. [2] We sought to improve student experiences via a course incorporating wellness checkpoints alongside content reviews, while maintaining sufficient time and flexibility for targeted self-study. [3]

Design: Instructional methods and materials used:
Co-directed by a basic scientist-clinician faculty team during the final four weeks of the pre-clerkship phase, this course was designed to enable flexibility in choosing in-person or synchronous online participation. Course components included:

1. Individual Study Plans (ISP, course prerequisite)
2. Practice Self-Assessments (Three required)
3. Faculty-led Interactive Review Sessions (IRS) covering preclinical science topics. Students were required to select 4 out of 9 IRS to attend.
4. Faculty Office Hours (optional)
5. Reflection Surveys documenting study plan progress and wellness (one per week)
6. Faculty Mentor Check-In Meetings at course mid/endpoints

Determinations of student Step 1-readiness were guided by monitoring academic/wellness parameters.

Outcomes:
Course impact was measured from 23 students' responses (79% response rate) to a post-course evaluation (Likert-scale 1 'far-below' to 5 'far-exceeds' expectations). Average ratings for 6 course components ranged from 2.86-3.17; Overall course rating was 2.9. Activities associated with student autonomy (ISP, practice assessments, faculty check-ins) rated higher than those perceived as 'required' (weekly surveys, IRS).

Innovation's strengths and limitations:
Course strengths centered on aspects that maximized student flexibility, autonomy, and wellness. Time constraints prevented a comprehensive review across all pre-clerkship curricula.

Feasibility and transferability for adoption:
Course elements may provide models for other schools to holistically improve students' preparation for

Step 1 and other exams that have potential to become more high-stakes upon transition to pass/fail scoring of Step 1. [4]

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The longitudinal use of fictional families in health systems sciences education: Adding "butter" to "broccoli".

Submission Type: Innovation Abstract
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Region: CGEA

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Abstract Body:

Objective or purpose of innovation:
To increase engagement and contextual understanding in health systems sciences (HSS) by integrating longitudinal case examples for pre-clinical medical students.

Background and/or theoretical framework and importance to the field:
Implementation of HSS in pre-clinical curricula is criticized by students, with increased performance gaps in student ratings. Students report perceiving the material as irrelevant and lacking continuity. The use of narrative is an effective means of education with previous success in the HSS realm and may reduce these criticisms.

Design: Instructional methods and materials used:
A team of 6 fourth-year medical students developed a diverse family of characters pertinent to established learning objectives within their institution's HSS curriculum. Using these families, the team developed three different scenarios for each learning event. A full family tree with descriptions and backgrounds of characters was constructed in the Prezi digital platform. Course lecturers were then provided access to the family tree and case narratives and are now able to implement them into their teaching style and materials.

Outcomes:
The team successfully created a longitudinal family with diverse individuals which is being integrated into the new curriculum. Course directors are presently collecting responses to the new curriculum through use of mandatory RedCap surveys.

Innovation's strengths and limitations:
This curriculum was designed by a diverse group of 4th year students informed by their individual experiences. Characters are of diverse racial, cultural, gender, age, sexual, and religious identities. Such longitudinal use of characters allows students to develop empathy and connect ideas to their professional identity. Conversely, this approach has only been implemented at a single institution for several months. It has thus been difficult to find a comparative sample due to the lack of available data.

Feasibility and transferability for adoption:
This low-cost innovation is easily transferable to other institutions and leverages the experiences of the medical student body. Scenarios can be customized to particular community needs, with focuses such as mental health or migrant work.

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A MAP for uncharted territory: Creating a guide for assessment in a competency-based medical school curriculum

Submission Type: Innovation Abstract
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Region: CGEA

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Abstract Body:

Objective or purpose of innovation:
To describe our process for developing and implementing a unique guide for students, faculty members and administrators engaged in a competency-based medical school curriculum.

Background and/or theoretical framework and importance to the field:
In 2016, we launched a new curriculum incorporating early clinical experiences, integrated basic and clinical sciences, competency-based advancement, demonstration of competence and aspiring to excellence, and alignment of assessments, curricular content and real-world performance. We created a guiding document – the Manual for Assessment and Promotion (MAP) – to actualize these principles. We believe this process could aid other schools transitioning to competency-based curricula.

Design: Instructional methods and materials used:
Writing the MAP was an iterative, collaborative process involving faculty members, academic and student affairs leaders, and students. It combines pre-existing elements (e.g., technical standards) with new ones (e.g., milestones, student competence committee). Milestones were based on curricular timelines, ACGME Core Competencies, and AAMC Core Entrustable Professional Activities. The assessment suite includes progress testing, multisource feedback, direct observation, and portfolios. The student competence committee structure is influenced by GME clinical competency committees and student-specific protections (e.g., FERRPA).

Outcomes:
Writing the MAP created a unified vision for those involved that was easily communicated to others. Milestone timelines reinforce our integrated courses. Our student competence committee has recommended approximately 2900 course grades to date. The MAP has withstood the test of time; most amendments clarify language or intent, rather than introducing substantive changes.

Innovation's strengths and limitations:
The MAP unifies our curriculum and aligns us with national UME and GME priorities. We are still defining metrics for excellence as we accrue data about progress suite performance and other student outcomes.

Feasibility and transferability for adoption:
The MAP itself is quite contextual, limiting verbatim transfer to other colleges. We think that our process and vision could be adopted by others who embark on this journey.

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Creating Safe Learning Environments to Explore Diversity, Equity, Inclusion, and Anti-Racism Curriculum

Submission Type: Innovation Abstract
Accepted as: Oral Presentation
Region: CGEA

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Abstract Body:

Objective or purpose of innovation:
To answer a call to action from Mayo Clinic Alix School of Medicine students, a 4-day Diversity, Equity, Inclusion, and Anti-racism (DEI-AR) course was created for first and second-year medical students (n=194). Paramount to the creation of this course was the establishment of a safe learning environment (LE). Limited by the COVID 19 pandemic, a virtual LE was required and spotlighted extra attention to psychological safety.

Background and/or theoretical framework and importance to the field:
A safe LE allows students to co-construct knowledge1 through discussion and discourse with faculty and fellow students. Critical components to creating a safe LE include all aspects of the environment (personal, physical/virtual, social, and psychological)2,3 and the modeling of optimal behaviors (growth mindset4, empathy5, and compassion). Cumulative effects of a safe LE allow students to examine sensitive or triggering topics, thus challenging biases and fostering inclusive thinking.6

Design: Instructional methods and materials used:
Prior to the course, faculty/facilitators were trained through interactive, case-based DEI-AR scenarios for skill set development. Faculty/facilitators created safe LE through large and small group (10 students or less) exploration. Office hours helped to debrief curricular or individual questions/concerns for facilitators and students separately. Given the virtual environment requirement, we optimized functions in Zoom such as highlighting inclusive language via posting of personal pronouns and phonetic spelling of names. Zoom chat function provided opportunities to create a social environment through discussion and reactions.

Outcomes:
Students rated the course learning environment with a 4.0/5.0. Student comments highlighted the use of empathy, respect, compassion, and constructive growth as strengths of the faculty/facilitators and ultimately the course.

Innovation's strengths and limitations:
The course launched amid a pandemic. Additional academic years will provide greater clarity on the creation of a safe LE and the need for a virtual platform.

Feasibility and transferability for adoption:

The creation of safe LE can be replicated throughout medical and health professions education. Thoughtful consideration is required to examine and meet learner's needs.

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Creating a Diverse Problem-Based Learning Patient Population

Submission Type: Innovation Abstract
Accepted as: Oral Presentation
Region: CGEA

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Abstract Body:

Objective or purpose of innovation:
PBL case scenarios offer a unique opportunity to diversify exposure to patient identities and create curriculum that addresses diversity. The purpose of this study was to create and evaluate inclusion of Patient ID cards in a PBL curriculum and determine the impact on students' discussions in PBL.

Background and/or theoretical framework and importance to the field:
PBL cases represent 40% of curricular time at Case Western Reserve University School of Medicine. Analysis of 93 PBL cases for age, racial identity, ethnicity and gender identity revealed that identifiers were lacking. This lack of diversity fails to prepare students for the diverse populations they will ultimately see in clinical practice.

Design: Instructional methods and materials used:
Patient ID cards were developed for each PBL case that included a patient photograph and random assignment of name, age, sex at birth, gender identity, sexual orientation, racial identity, ethnicity and zip code. We collected facilitator feedback to evaluate the addition of Patient ID cards.

Outcomes:
The inclusion of Patient ID cards enriched discussions in PBL groups. For example, a Type 2 Diabetes case had the patient's racial identity assigned as Native American. Some groups discussed the incidence of Type 2 Diabetes in the Native American population as well as in other populations. Discussions also included social determinants of health such as lack of support and access to care. In a different case on CML the patient was assigned as gay for sexual orientation. Some groups discussed obstacles for receiving care in the LGBT community.

Innovation's strengths and limitations:
Inclusion of Patient ID cards enriches PBL discussions and prompts students to discuss diverse patient populations and social determinants of health. Random assignment of patient identifiers avoids the possibility of unintended stereotyping of various populations. Care must be taken to assure that clinical conditions presented within the PBL case are consistent with the assigned patient identity.

Feasibility and transferability for adoption:
The Patient ID cards can be easily adopted by other institutions.

References:

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Clerkship Year Honors: Rewarding Students for Sustained Superior Performance

Submission Type: Innovation Abstract
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Region: CGEA

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Abstract Body:

Objective or purpose of innovation:
WSU-BSOM recently changed clerkship grading to Pass/Fail, removing the requirement for shelf exams, and introducing a Doctoring Honors designation for sustained superior performance in the clerkship year. The objective of this innovation report is to introduce these changes to a broad audience and report our outcomes.

Background and/or theoretical framework and importance to the field:
Clerkship grading is highly variable across medical schools. Many schools have tiered (fail/pass/high pass/honors) grading systems and use NBME subject (shelf) exams as a large part of grade calculation.1 Clerkship grading is challenging because of subjective clinical evaluations, standardized exams disadvantaging minority students,2 and/or not appropriately weighting what matters in a good physician.3

Design: Instructional methods and materials used:
During the 2019-2020 AY year, clerkships were graded using the new schema. At the end of each block, clerkship directors gave honors nominations to students whom they felt demonstrated superior performance. At the end of the year, honors nominations for each student were compiled. Clerkship directors and administrative staff then met to discuss students who fell in the top 20% to decide if specific behaviors merited inclusion in the honors category. Honors was determined by consensus of the group and was included on the MSPE.

Outcomes:
Throughout the year, clerkship directors developed their honors criteria, consisting of superior performance on evaluations, graded activities and professionalism. Directors were struck by the similarity in honors nominations and ease of consensus of the group. A small number of students were discussed for professionalism and unanimously removed from consideration. Student perception was that the process was not transparent and that those who do not receive honors suffer from a lack of accolades on their MSPE.

Innovation's strengths and limitations:
Strengths include consensus and consistent grading in clerkships; limitations are one year of data.

Feasibility and transferability for adoption:
We believe this grading scheme is general and feasible enough to be transferable to many other contexts.

References:

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Patient Safety Day: a virtual initiative to improve medical student knowledge on quality improvement

Submission Type: Innovation Abstract
Accepted as: Oral Presentation
Region: CGEA

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Abstract Body:

Objective or purpose of innovation:
The goal of this project is to improve the knowledge of medical students on quality improvement and patient safety using a virtual initiative.

Background and/or theoretical framework and importance to the field:
Medical errors are the third leading cause of death in the United States (1). Despite this, patient safety and quality improvement (QI) are often overlooked in undergraduate medical training. COVID-19 has added challenges to medical education as many in-person events have been cancelled.

Design: Instructional methods and materials used:
Using the Zoom platform, a short patient safety lecture was given, then students were sent to breakout rooms of < 15 students based on a medical specialty of their choice. In these rooms, students were given a QI and/or patient safety-related "problem" within that specialty. Students developed an aim, created a driver diagram, and designed PDSA (plan, do study, act) cycles based on the problem. Students' learning was evaluated using a pre and post-test. Statistical analysis was completed using paired t-test and chi-squared analysis.

Outcomes:
Based on our QI test, we saw a 16% (n= 272, p<.00005) increase in quality theory knowledge. There was also a self perceived increase in knowledge as 92% of students (n=269, p<.00005) said they improved their QI knowledge. 81% (n=268, p<.0005) of students also stated that they were more equipped to start their own QI project.

Innovation's strengths and limitations:
Using an interactive online platform, quality theory can be taught through formal lecture and small group interaction. More study is necessary to determine the longitudinal benefit of this initiative, however, it is our hope that this will translate to increased involvement in QI to improve our health system and ultimately patient care.

Feasibility and transferability for adoption:
Due to the virtual nature of this event, it is feasible to add this initiative to current medical curricula. Schools would need an online software to host the meeting and faculty or senior students to lead breakout room discussions.

References:

1. Makary Martin A, Daniel Michael. Medical error—the third leading cause of death in the US BMJ 2016; 353 :i2139

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Practicing Community Level Intervention to Promote the Health and Well-being of a Vulnerable Population During a Pandemic

Submission Type: Innovation Abstract
Accepted as: Oral Presentation
Region: CGEA

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Abstract Body:

Objective or purpose of innovation:
The objective of this innovation is to improve the social connectedness of older adults amidst the pandemic and gain invaluable medical student experience implementing community level interventions.

Background and/or theoretical framework and importance to the field:
The responsibilities of future leaders in health care extend beyond exceptional clinical practice. A holistic approach to patient care is essential for aspiring physicians including a willingness to take action within communities. This must be emphasized in medical education.

Unique challenges of the pandemic demonstrate the need for multidimensionally considerate health care. This crisis creates a major communication barrier and may lead individuals into social isolation which is implicated in reduced health outcomes. The older adult population's technological inexperience increases their risk of social isolation and downstream consequences on their well-being.

The Michigan State Plan on Aging includes objectives to expand and enhance electronic/virtual connectivity and to promote virtual social connectedness. Community level interventions that promote elderly access to technology help accomplish these objectives and improve the health of a vulnerable population during the pandemic.

Design: Instructional methods and materials used:

1. In collaboration with the Detroit Area Agency on Aging (DAAA), a training curriculum for older adults was selected for development – a Zoom tutorial for mobile devices.
2. Best practices were researched and the curriculum was developed in the form of an original video and pamphlet.
3. The tutorial was presented to older adult participants and their satisfaction was surveyed. Outcomes include the percentage of older adults reporting increased comfort using technology to make social connections.
4. Students reflected on this intervention's impact on their medical education.

Outcomes:
This is a work in progress, but older adults have responded positively, indicating the curriculum will help increase older adult comfort with technology. Students report positive impact on medical education.

Innovation's strengths and limitations:
Strengths include the ability to intervene completely virtually.

Limitations include that outcome measures are built on personal experience.

Feasibility and transferability for adoption:
Easily Adaptable.

References:

1. Chen, Yi-Ru Regina (01/28/2016). "The Effect of Information Communication Technology Interventions on Reducing Social Isolation in the Elderly: A Systematic Review". Journal of Medical Internet Research (1439-4456), 18 (1), p. e18
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3. "MICHIGAN STATE PLAN ON AGING FISCAL YEARS 2021-2023." Aging & Adult Services Agency, Michigan Department of Health & Human Services, 12 Oct. 2020.
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5. Smitherman, Herbert C, et al. "Dying Before Their Time III 19-Year (1997-2017) Comparative Analysis of Excess Mortality in Detroit (PSA 1-A)." Detroit Area Agency on Aging, Wayne State University School of Medicine, July 2020.

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A Student Led Intervention: Integrating Anti-Racist Social Justice Content into Medical Education

Submission Type: Innovation Abstract
Accepted as: Oral Presentation
Region: CGEA

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Abstract Body:

Objective or purpose of innovation:
Diversity Week was designed to address the gap in our curriculum regarding racism, health equity and social justice education.

Background and/or theoretical framework and importance to the field:
In 2000, the LCME guidelines called for integration of SDoH and cultural competency as part of medical education. Since then, medical schools have struggled to incorporate these concepts, Wayne State University School of Medicine (WSUSOM) included. The calls for racial reconciliation and the COVID-19 pandemic reveal persistent health disparities in minoritized communities. It is imperative that medical curricula embrace anti-racist education.

Design: Instructional methods and materials used:
Five days held virtually over Zoom from 6-8pm with a mix of webinars, panels, & small-groups, led by SOM faculty, alumni, & local experts. Sessions were open to the public and medical students with the option of service-learning credit for preclinical students. Topics covered: racism in medicine, as a form of trauma, identities and intersectionality, discrimination in medical education, healthcare and vulnerable communities, and allyship. Voluntary post-session surveys were distributed following each session to identify attendees' attitudes and understanding of the topics presented.

Outcomes:
Attendance for the whole week was over 1,500 with an average of 170 participants per session demonstrating consistent voluntary attendance by medical students, faculty, and community leaders. Post-session survey analysis revealed an evident need for substantive curricula changes to include anti-racist social justice topics. Over the week, 55-65% of respondents said the sessions were 'very impactful' in understanding racial disparities in medicine, consequences of microaggression, intersectionality, and race as a construct.

Innovation's strengths and limitations:
Participants indicated the need for more small-group discussions to process the information, but appreciated the unique format and the accessibility of content presented. 93% of attendees indicated a desire for more content in the curriculum similar to topics presented.

Feasibility and transferability for adoption:
There is interest and a need for the content but the integration relies on institutional investment of resources and support. Curriculum should be Institution-led with student collaboration.

References:
1. American Medical Association, & O'Reilly, K. O. (2020, November 16). AMA: Racism is a threat to public health. American Medical Association. https://www.ama-assn.org/delivering-care/health-equity/ama-racism-threat-public-health
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3. Yeager KA, Bauer-Wu S. Cultural humility: essential foundation for clinical researchers. Appl Nurs Res. 2013;26(4):251-256. doi:10.1016/j.apnr.2013.06.008
4. Crosson JC, Deng W, Brazeau C, Boyd L, Soto-Greene M. Evaluating the effect of cultural competency training on medical student attitudes. Fam Med. 2004;36(3):199-203.

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Shedding Light on Moonlighter Supervision

Submission Type: Innovation Abstract
Accepted as: Poster
Region: CGEA

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Abstract Body:

Objective or purpose of innovation:
We aimed to improve attending supervision of post-graduate trainees working off-hour shifts on uncovered hospitalist services and increase their identification of the hospitalist as a resource for clinical decision making.

Background and/or theoretical framework and importance to the field:
Moonlighting trainees are an essential labor source in hospital medicine. These shifts provide diverse clinical experiences while increasing confidence and broadening competencies. Despite approximately 450 off-hour shifts covered annually by post-graduate trainees at our institution, little is known about their clinical decision while moonlighting, the amount of clinical supervision provided and who they turn to for assistance.

Design: Instructional methods and materials used:
Eligible moonlighters received an anonymous online pre-onboarding survey, and required to attend an onboarding session clarifying specific criteria for attending notification. Follow-up surveys were completed at 6 month intervals over 18 months. Hospitalists staffing of moonlighter admissions coincided with onboarding initiation and billing data over 2 months was analylzed.

Outcomes:

- Response rates for all surveys (pre, post and post-post) were 30% of post graduate trainees.
- Over 18 months, moonlighters identification of the hospitalist as the primary resource for clinical information increased from 38.5% (pre-onboarding) to 55% (6 months post) to 80% (12 months post).
- Moonlighters desired additional education on managing hospitalist patients while moonlighting (53.8, 50% and 57.7%). Requests for transplant education decreased slightly over 18 months from 76.6% to 57%.
- Attending billing data indicated 52 patients were staffed in a 2 month period.

Innovation's strengths and limitations:
Hospitalists staffing moonlighter admissions improved their identification of the hospitalist as a resource for clinical decision making with potential patient safety implications. Despite onboarding, moonlighters still sought additional education on managing hospitalist patients. Limitations include the response rate of moonlighters. Areas for for future work include determining specific areas for educational interventions regarding hospitalist moonlighting and examining patient outcomes data.

Feasibility and transferability for adoption:
Pre-moonlighting training targeted at specific hospital medicine-related competencies was feasible to implement and could be easily disseminated to other institutions.

References:
1. Benson, N. M., & Beach, S. R. (2018). After Hours: A Survey of Moonlighting Practices in Psychiatry Residents. Academic Psychiatry, 43(1), 18–22. https://doi.org/10.1007/s40596-018-1003-6
2. Farnan, J. M., Johnson, J. K., Meltzer, D. O., Humphrey, H. J., & Arora, V. M. (2008). Resident uncertainty in clinical decision making and impact on patient care: a qualitative study. Quality and Safety in Health Care, 17(2), 122–126. https://doi.org/10.1136/qshc.2007.023184

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Professional Coaching in Residency: The Analysis of a Novel Approach to address Resident Burnout

Submission Type: Innovation Abstract
Accepted as: Poster
Region: CGEA

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Abstract Body:

Objective or purpose of innovation:
To implement and analyze an organizational level coaching program for ophthalmology residents at Kresge Eye Institute as the front-line method for prevention and management of physician burnout.

Background and/or theoretical framework and importance to the field:
Burnout is a well-documented stressor in medicine. A 2018 study found that 55.8% of ophthalmology residents displayed symptoms of burnout. Burnout has been shown to significantly increase unprofessional conduct and medical errors. However, there is varied effectiveness and limited data regarding current "self-care" interventions addressing burnout. Simply put, we have yet to find one cure for this pervasive phenomenon in medicine. A recent and promising model to tackle burnout in the medical field is coaching. The Harvard Business Review and American Medical Association have demonstrated the importance of coaching and its positive effects on professional performance and well-being.

Design: Instructional methods and materials used:
We plan on utilizing the six-step Kern Method to develop a resident wellness curriculum addressing resident burnout. This curriculum will focus on implementation of professional coaching. We will evaluate the success of this program at six months and one year of implementation though survey data.

Outcomes:
The effectiveness of professional coaching as a new addition to the ophthalmology curriculum at Kresge Eye Institute will largely be judged by the five level Kirkpatrick Pyramid for program evaluation. The goal will be to provide knowledge and teach the vocabulary and skills needed to tackle burnout. We will measure the residents' ability to adapt these tools into their education through surveys grading the effectiveness of our coaching curriculum throughout all stages of the Kirkpatrick Pyramid.

Innovation's strengths and limitations:
Potential limitations include standardizing quality of coaches and creating adequate time during residency to engage with coaches. We plan to address this by tracking individual coach results and utilizing virtual meeting techniques, respectively.

Feasibility and transferability for adoption:
We hope this program serves as a broadly applicable model for improving resident wellness across specialties throughout the country

References:
1. Center C, Davis M, Detre T, et al. Confronting Depression and Suicide in Physicians: A Consensus Statement. JAMA. 2003;289(23):3161–3166.
2. Coutu D, Kauffman C. What Can Coaches Do for You? Harvard Business Review. January 2009.

3. Deiorio NM, Carney PA, Kahl LE, et al. Coaching: a new model for academic and career achievement. Medical Education Online. 2016;21(1):33480. doi:10.3402/meo.v21.33480
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5. Dyrbye LN, Burke SE, Hardeman RR, et al. Association of Clinical Specialty With Symptoms of Burnout and Career Choice Regret Among US Resident Physicians. JAMA. 2018;320(11):1114–1130.
6. Dyrbye LN, Massie FS, Eacker A, et al. Relationship Between Burnout and Professional Conduct and Attitudes Among US Medical Students. JAMA. 2010;304(11):1173–1180.
7. Dyrbye LN, Shanafelt TD, Gill PR, Satele DV, West CP. Effect of a Professional Coaching Intervention on the Well-being and Distress of Physicians: A Pilot Randomized Clinical Trial. JAMA Intern Med.2019;179(10):1406–1414.
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9. West CP, Tan AD, Habermann TM, et al. Association of resident fatigue and distress with perceived medical errors. JAMA. 2009 Sep 23;302(12):1294-300.

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Bridge to M4: development of an innovative residency application preparation curriculum

Submission Type: Innovation Abstract
Accepted as: Poster
Region: CGEA

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Abstract Body:

Objective or purpose of innovation:
To create a curriculum designed to prepare medical students for the residency application process.

Background and/or theoretical framework and importance to the field:
The residency application process is daunting, time-consuming, and variable for applicants, and mentoring students through this process is important, perhaps this year more than ever (1). The complex decision-making applicants face when assessing program "fit" and creating rank lists can be overwhelming, and with changes to the application process due to COVID-19, students were challenged to learn about programs remotely and interview virtually (2).

Design: Instructional methods and materials used:
A needs assessment survey was distributed to rising fourth-year medical students to inform the development of Bridge to M4 (B2M4). Course materials utilized a combination of existing residency preparation materials from medical organizations (e.g., AAMC, AMA), while other in-house resources were developed to facilitate a strength-based and values-based approach to application preparation.

Outcomes:
35 students responded to the survey, with 35/35 indicating a strong interest in a course to prepare for the changes to the residency application process. Utilizing this data, B2M4 was designed as a four-week elective with nine faculty course facilitators. In B2M4, students (n=36) participated in virtual mock interviews, developed their curriculum vitae and personal statement, prepared an elevator pitch and selected residency programs to apply (~35 hours).

Innovation's strengths and limitations:
B2M4 was an innovative curriculum design, giving students the opportunity to prepare for the residency application process through reflective activities guiding values clarification, strengths identification, and goal setting. This elective demonstrates the value of student-informed curriculum with the support of faculty mentors.

Feasibility and transferability for adoption:
This curriculum has proven to be transferable to students at both the institutions of ES and NC, as reflective activities are currently being utilized formally and informally by faculty and residents at these institutions with their mentees. B2M4 offers a formal opportunity for students to continue to explore their goals and desires when making decisions about a future residency program.

References:

1. Rodoni BM, Eyrich NW, Fessell DP. COVID-19 & the Residency Match: The Added Importance of Mentoring. Ann Surg. 2020;272(2):e151-e152.

2. Hammoud MM, Standiford T, Carmody JB. Potential Implications of COVID-19 for the 2020-2021 Residency Application Cycle. JAMA. 2020;324(1):29–30.

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A Student Led Virtual Tabletop Simulation for the Allocation of Scarce Critical Care Resources during a Public Health Emergency

Submission Type: Innovation Abstract
Accepted as: Poster
Region: CGEA

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Abstract Body:

Objective or purpose of innovation:
To utilize a tabletop simulation to prepare a triage team to apply policy guidelines when allocating critical care resources during a public health emergency.

Background and/or theoretical framework and importance to the field:
It is imperative that hospital teams prepare to implement policies to allocate scarce critical resources during the COVID-19 pandemic. The bridge between policy creation and optimal implementation is fraught with challenges, yet inefficiencies cannot be afforded during a pandemic. Tabletop simulations are used to prepare teams for disaster scenarios, and may help teams enhance pandemic preparedness.

Design: Instructional methods and materials used:
The multidisciplinary hospital-based triage team responsible for enacting a critical resources policy participated in a 60-minute tabletop simulation virtually. The case-based simulation was led by a skilled facilitator; participants were asked to apply the policy to various patient scenarios. Notes were taken regarding participants' reflections during debriefing. Participants were asked to complete a pre- and posttest in Google Forms; test questions assessed their recall and ability to apply the policy to clinical cases.

Outcomes:
13/21 triage team members participated in the virtual tabletop simulation. Opportunities to improve policy use and team function across three key themes emerged: policy interpretation, policy application, and policy implementation. In addition, participants found it difficult to separate their roles as triage team members and clinicians which is important for hospital leadership to recognize and support. Pre- and posttest results were unable to be compared as 18 triage team members participated in the pretest but only 3 participated in the posttest.

Innovation's strengths and limitations:
The simulation was well received, enabling the team to identify ways to pre-emptively improve policy implementation. Due to the low posttest response rate we were unable to measure if the simulation improves an individual's ability to apply the policy to patient scenarios.

Feasibility and transferability for adoption:
The tabletop simulation cases can be adapted and implemented successfully for this purpose. A trained facilitator is key.

References:

1. White DB, Lo B. A framework for rationing ventilators and critical care beds during the COVID-19 pandemic. JAMA. 2020 Mar 27. doi:10.1001/jama.2020.5046
2. Christian MD, Devereaux AV, Dichter JR, Rubinson L, Kissoon N; Task Force for Mass Critical Care; Task Force for Mass Critical

Care. Introduction and executive summary: care of the critically ill and injured during pandemics and disasters: CHEST consensus statement. Chest. 2014 Oct;146(4 Suppl):8S-34S. doi: 10.1378/chest.14-0732. PMID: 25144202; PMCID: PMC7094437.
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A Student in my Pocket: Development of a Virtual Internal Medicine Hospital Rotation during the Covid-19 Pandemic

Submission Type: Innovation Abstract
Accepted as: Poster
Region: CGEA

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Abstract Body:

Objective or purpose of innovation:
Develop a clinical rotation for private Physician Assistant (PA) programs negatively impacted by COVID-19 by implementing and evaluating a four-week Virtual PA Rotation (VPAR) comprised of 1) direct patient care, 2) medical educator facilitated breakout sessions, 3) asynchronous learning.

Background and/or theoretical framework and importance to the field:
40% of PAs identify the hospital as their principal clinical setting. Many hospital student rotations were cancelled due to COVID-19, negatively impacting the 70% of PA programs not affiliated with an academic medical center. To address this need, medical educators at University of Chicago created a VPAR.

Design: Instructional methods and materials used:
Five students were enrolled. Direct patient experiences included virtual interviews, preceptor staffing and completion of progress notes. This was augmented with medical educator-facilitated breakout sessions and asynchronous didactic sessions via Zoom. VPAR evaluation included: 1) comparison of virtual vs traditional in-person rotation patient logs, 2) post-curriculum survey of students and medical educators' satisfaction and self-efficacy, 3) student pass rate on end of rotation (EOR) examination.

Outcomes:
Students recorded seeing 171 patients virtually with 1030 diagnoses, similar to the 182 patients and 845 diagnoses from 2019 in-person rotations. Educational activities including interviewing patients, case presentations and discussions with preceptors, were rated as most useful on a 5-point Likert-scale via student survey results. Students felt most prepared to review charts, analyze results and obtain a history. 100% of students passed their EOR exam.

85% (11/13) of medical educators were moderately or extremely satisfied with the VPAR, 77% were moderately or extremely likely to recommend the VPAR to other educators, and 100% felt this experience made them more open to interprofessional teaching.

Innovation's strengths and limitations:
Strengths: low cost; 100% EOR pass rate; high student ratings; comparable patient encounters and diagnoses. Limitations: increased medical educator time commitment; barriers of technology; loss of organic educational experiences.

Feasibility and transferability for adoption:

This model can be adjusted for other practice settings, specialties and professions and adjusted for different timeframes.

References:

1. National Commission on Certification of Physician Assistants, Inc. (2020, April). 2019 Statistical Profile of Certified Physician Assistants: An Annual Report of the National Commission on Certification of Physician Assistants. Retrieved 11/28/2020, from http://www.nccpa.net/research Physician Assistant Education Association
2. By the Numbers: Program Report 35: Data from the 2019 Program Survey, Washington, DC: PAEA; 2020. doi: 10.17538/PR35.2020

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Educational Leadership in Academic Medicine: A dynamically responsive elective to meet student needs

Submission Type: Innovation Abstract
Accepted as: Poster
Region: CGEA

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Abstract Body:

Objective or purpose of innovation:
To implement a student-created leadership course where participant feedback is utilized in an iterative curricular model to meet evolving needs.

Background and/or theoretical framework and importance to the field:
The Educational Leadership in Academic Medicine course ("Leadership Elective") was developed in 2017 (by ES) to provide a structured opportunity to explore leadership theories and practice that facilitate the development of effective leaders in both the classroom and clinical setting (1).

Design: Instructional methods and materials used:
Three cohorts of first- and second-year medical students (n=89) enrolled in the Leadership Elective from 2017-2019. Teaching assistants were selected from the previous cohort and mentored in their review and revision of the curriculum. Each cohort of students completed a leadership efficacy questionnaire (pre- and post-course) and submitted course-specific feedback to identify future student leadership needs (2).

Outcomes:
Students reported an overall improvement in their self-perceived leadership efficacy and anecdotally found the course beneficial in developing leadership identity. Student feedback highlighted the need for additional opportunities for reflection to guide personal and professional development that enhances interpersonal and communication skills.

Innovation's strengths and limitations:
The original Leadership Elective focused primarily on leadership framework and theory, suggesting the need for an integrative approach to apply theory in course activities. The revised curriculum allows students the opportunity to reflect on their leadership story, expand upon professional development, progressively develop leadership skills, and prepare for real world experiences. Limitations include implementing a novel curriculum and gathering comparative feedback, as each student cohort varies every year reflecting changing educational needs.

Feasibility and transferability for adoption:
This curriculum provides students the opportunity to formally reflect on their leadership journey, refine interpersonal and communication skills, and collaborate with peers, all which contribute to furthering leadership development in undergraduate medical education (3). As the existing course provides a flexible structure to implement curriculum changes, course evaluations will continue to be distributed to each cohort to continue the dynamic nature of content based on student needs.

References:
1. Northouse PG. Leadership: Theory and practice. Sage publications; 2018.
2. Tsai A, Moniz MH, Davis MM, Chang T. Meaning and purpose: refocusing on the why in medical education. NEJM Catalyst. 2017; 3(4).
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Weekly CME Webinars for Pediatric Urgent Care Providers

Submission Type: Innovation Abstract
Accepted as: Poster
Region: CGEA

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Abstract Body:

Objective or purpose of innovation:
To provide ongoing virtual continuing medical education (CME) to members of the Society for Pediatric Urgent Care (SPUC).

Background and/or theoretical framework and importance to the field:
Most states across the United States require physicians to participate in continuing medical education (CME) to maintain licensure. However, pediatric CME is challenging to find (Nelson, 2019), particularly pediatric urgent care (PUC)-specific CME, and challenges have multiplied during the pandemic. For this reason, SPUC started Weekly Webinars, a weekly national webinar that provides PUC-specific CME.

Design: Instructional methods and materials used:
A group of PUC providers from Children's Hospital of Wisconsin, Children's Mercy Kansas City, Seattle Children's, Children's National, and Yale recruit speakers from their institutions for the hour-long weekly webinars held via an online synchronous platform. Speakers may be either subspecialists or PUC providers (for case presentations, evidence-based guidelines). In order to encourage active participation, there are 3-4 poll questions in the webinar covering the material. Participants must receive a score of 60% or higher to pass the quiz and receive CME. The post-webinar survey also assesses participant satisfaction with the webinar and elicits education needs.

Outcomes:
From January 9, 2019, to September 17, 2020, SPUC had 1768 views of 30 webinars covering 30 topics. Participants claimed CME credit 1178 times and passed the post-webinar quiz to receive CME 1066 times. Providers indicate they are satisfied with the CME.

Innovation's strengths and limitations:
Strengths of the SPUC weekly webinar include filling the gap of providing PUC-specific CME to members of SPUC. Limitations of our curriculum include that while we are tailoring many of our webinar topics to provider self-identified needs, we are often limited by speaker availability.

Feasibility and transferability for adoption:
This is an example of how organizations can provide accessible CME now that we are not allowed to attend live conferences.

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Assessing What Matters – A Milestone Focused on Justice, Equity, Diversity, & Inclusion (JEDI)

Submission Type: Innovation Abstract
Accepted as: Poster
Region: CGEA

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Abstract Body:

Objective or purpose of innovation:
To develop an ACGME-like milestone that concurrently serves as a curriculum blueprint across the continuum of medical education.

Background and/or theoretical framework and importance to the field:
In 2019, Milwaukee County became one of the first municipalities to declare racism a public health crisis.(1) Motivated by racial injustice and COVID-19 disparities medical education (2-4) are accelerating efforts to address racism and eliminate health disparities (AAMC's DEI Cross-Continuum Competencies). Yet, the 2019 ACGME Common Program Requirements six core competencies fails to include the key terms (disparities, inequities, justice, community, underserved) and requires a new structural competency domain with assessments.(5)

Design: Instructional methods and materials used:
To match our existing assessment framework, an ACGME like milestone, applicable across the continuum of medical education was developed by an interprofessional team (eg, MedEd, Ethics, DE&I). A literature review was completed to identify key milestone elements. Milestone was framed by ACGME core competencies (eg, MK, PC, SBP) and progression delineated across five levels. The 8-page milestone was iteratively revised by multiple stakeholders to 1-page suitable for inclusion as the end of each GME program's required milestone assessment form.

Outcomes:
Enthusiastic and pervasive support for the structural fluency milestone was achieved across the continuum. It was approved by GME Council for inclusion as a required formative milestone in every program. GME milestone data informs curriculum/instruction across the continuum (UME, GME, CME)

using an expanded 2-page milestone for use as a blueprint at it retained each of the competency domains and references.

Innovation's strengths and limitations:
Our milestone innovation recognizes need for data: to monitor our ability to learn/teach and ultimately eliminate racism (and other isms) and health disparities. Its strength is its limitation as we recognize it's a journey and it will evolve as we do.

Feasibility and transferability for adoption:
Formatted like existing ACGME milestones implementation within the assessment system was seamless enhancing its feasibility and transferability.

References:

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A Novel Clerkship Curriculum to Address Racism in Pediatrics; A Partnership of Clerkship Coordinator and Director

Submission Type: Innovation Abstract
Accepted as: Poster
Region: CGEA

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Abstract Body:

Objective or purpose of innovation:

- Create a pediatric clerkship session on controversial topics in the lens of equity and structural racism
- Engage students to share both societal and personal experiences with structural racism

Background and/or theoretical framework and importance to the field:
Our pediatric clerkship, like many pediatric UME programs, lacked structural didactic sessions addressing current examples of structural racism. (1, 2). Our clerkship coordinator and director partnered to develop an innovative, interactive session addressing structural racism. Given the disproportionate burden on COVID 19 on communities of color (3), as well as inequities in public education, we chose if and how public elementary schools should physically reopen.

Design: Instructional methods and materials used:
Clerkship faculty provided pre-session materials. Each session had approximately 25 students. Students divided into two groups in a debate format, and assigned a "side" to argue for (in person vs remote learning) based on racial and social barriers. After reviewing resources and discussion, each side gave an argument and counterargument. We adapted a previously published after session evaluation tool. (4)

Outcomes:
Response rate was 61% (44/72). 57% of students stated that this session changed their perspective about racism. 68% of students agreed that their knowledge improved ability to apply real life examples of structural racism. 95% felt their opinions were valued. Positive student comments included enjoying the interactive nature of the session and application to controversial topics. Critique included disproportionately the white students avoided the topic of racism.

Innovation's strengths and limitations:
Although the majority of students felt comfortable expressing their opinions, not all students did. In particular, one Latinx student expressed discomfort at the debate style picking a "winner" as making light of a serious topic. In addition, faculty noted that often the white students dominated conversation, and spoke less about racism in discussion. We plan to adapt the topic of future sessions, based on current controversies.

Feasibility and transferability for adoption:
This session is easily adapted and shared with other institutions.

References:
1. Ahmad NJ, Shi M. The need for anti-racism training in medical school curricula. Acad Med. 2017;92(8):1073 10.1097
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Exploring Health Information Visualization as an Innovative Method for Strengthening Clinical Reasoning and Patient Education

Submission Type: Innovation Abstract
Accepted as: Poster
Region: CGEA

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Abstract Body:

Objective or purpose of innovation:
The aim of this study was to determine the effectiveness of evidence-based infographic development in facilitating medical student skills in identifying, evaluating, and translating complex health information to a non-medical audience.

Background and/or theoretical framework and importance to the field:
Effective doctor-physician communication is a major determinant of patient outcomes. (1) Health information visualization through methods like infographics have shown to facilitate this process, improving patient engagement and comprehension of information across differing levels of health literacy. (2,3) This project also explores methods to increase student application of evidence-based medicine skills, such as critical evaluation of research and integrating evidence-based knowledge with patient values. (4)

Design: Instructional methods and materials used:
290 students at Wayne State University School of Medicine were assigned to groups of six to create an infographic informing a target audience about a myth about COVID-19. The assignment was divided into four steps: conducting a literature search, evaluating literature, creating an infographic, and presenting this information to a community partner. A survey was disseminated to students to determine the efficacy of infographic development in the aims stated above.

Outcomes:
First year medical students (29.3%) responded to the survey. The majority (89.4%) indicated infographics were effective for patient education. Seventy-three percent noted improved skills in communicating health information to a non-medical audience. The students found greatest difficulty in selecting relevant information from their literature search to share (24.7%).

Innovation's strengths and limitations:
With a growing body of new evidence on COVID-19 and risk of misinformation, this project uniquely positioned students to practice critically analyzing factors that increase the quality of research studies and translating health literature for patient consumption. A limitation to the project was access to robust literature on COVID-19 relevant to their target audience.

Feasibility and transferability for adoption:
This project can be easily adapted at any other medical institution.

References:
1. Ha JF, Longnecker N. Doctor-patient communication: a review. Ochsner J. 2010;10(1):38-43.
2. Arcia A, Woollen J, Bakken S. A Systematic Method for Exploring Data Attributes in Preparation for Designing Tailored

Infographics of Patient Reported Outcomes. EGEMS (Wash DC). 2018;6(1):2. Published 2018 Jan 24. doi:10.5334/egems.190
3. Balkac M, Ergun E. Role of Infographics in Healthcare. Chin Med J (Engl). 2018;131(20):2514-2517. doi:10.4103/0366-6999.243569
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Longitudinal Coaching for Fostering Character Development in Medical Students

Submission Type: Innovation Abstract
Accepted as: Poster
Region: CGEA

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Abstract Body:

Objective or purpose of innovation:
Foster character development in medical students through a longitudinal coaching program.

Background and/or theoretical framework and importance to the field:
Medical schools are increasingly utilizing learning communities and coaching to facilitate medical student professional development. The Medical College of Wisconsin's Kern Institute for the Transformation of Medical Education was established in 2017 to nurture authentic expressions of good character in medicine that enable caring and competence in the service of patients. Coaching programs offer an opportunity for focusing on such character development.

Design: Instructional methods and materials used:
We designed a pilot program of longitudinal coaching that partners a faculty member with 3-4 medical students for the duration of students' medical education. Faculty coaches meet individually with students every other month to discuss their personal and professional development. Faculty members and their students also meet monthly as a group sharing experiences and discussing the cultivation of character in their professional lives. Monthly faculty development sessions provide education on the topic and exercises for the monthly group coaching meetings.

Outcomes:
A total of 48 students and 13 faculty volunteered to participate in the program. Evaluation data obtained after the first year indicated a strong impact on students for multiple character strengths, especially honesty, perspective, and gratitude. Student surveys also showed the program's positive influence on attitudes and behaviors consistent with a growth mindset. Coach surveys showed that faculty also benefited greatly from the program with increases in sense of engagement and mentorship ability.

Innovation's strengths and limitations:
Strengths of this program included integration of faculty development and maintenance of group continuity to build trust and a sense of community. A significant limitation of the program is its voluntary status.

Feasibility and transferability for adoption:
This pilot shows that coaching programs are an effective means of achieving medical student character development. Addition of character development into existing learning community and coaching programs is achievable with the application of focused faculty development.

References:
1. Hauer K, Iverson N, Quach A, et al. Fostering medical students' lifelong learning skills with a dashboard, coaching and learning planning. Perspect Med Educ. 2018;7(5):311-7.
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Using an innovative longitudinal course to offer alternative pathways in undergraduate medical education

Submission Type: Innovation Abstract
Accepted as: Poster
Region: CGEA

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Abstract Body:

Objective or purpose of innovation:
Many medical students require flexibility in their education and primarily use a leave of absence (LOA). Our LOA students have reported feelings of isolation and distress around loss of connections, as well as housing instability, difficulty maintaining health insurance, and food insecurity. These negative outcomes disproportionately affect lower SES and URiM student populations. We present a University of Michigan Medical School (UMMS) administrative strategy to lessen the immediate financial burden and loss of community for decelerating students.

Background and/or theoretical framework and importance to the field:
Using a case study approach, qualitative data from existing LOA students will codify the impacts of LOA. Responses will inform development of an interview guide for CFI pilot students, who will participate during winter-spring 2021. We will conduct interviews with the pilot participants to measure student outcomes and inform broader implementation thereafter.

Design: Instructional methods and materials used:
We identified courses amenable to enrollment in lieu of an LOA and selected the Capstone for Impact (CFI), a graduation requirement for UMMS students requiring sustained self-directed learning. CFI was converted to a longitudinal course with variable credit load, providing flexibility. Students use the CFI checklist to determine a timeline for completion in consultation with a CFI advisor. Students are required to submit a detailed reflection at the semester's end.

Outcomes:
We modeled two cases representing needy students. For the year students are on LOA, out-of-pocket expenses (including health insurance) totaled ~$32,570, with no income from FFA or grants. The second case model showed annual expenses (including health insurance and prorated tuition) were ~$67,634. Income from FFA and grants ($64,950) was preserved, generating annual out-of-pocket expenses of ~$2,684.

Innovation's strengths and limitations:
Although the study is limited to a pilot case study at one institution, other medical schools may use this study and outcomes to model pathways at their own institutions.

Feasibility and transferability for adoption:
The study's domains of focus are not confined to one institution and are easily transferable.

References:
1. AAMC Careers in Medicine. Unplanned leaves of absence: Should I stay or should I go? https://www.aamc.org/cim/explore-options/unplanned-leaves-absence-should-i-stay-or-should-i-go
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Building Champions for Diversity, Equity, and Inclusion

Submission Type: Innovation Abstract
Accepted as: Poster
Region: CGEA

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Abstract Body:

Objective or purpose of innovation:
To describe the creation of an innovative Diversity, Equity, and Inclusion (DEI) initiative called the Diversity Champion Program.

Background and/or theoretical framework and importance to the field:
The Diversity Champion Program is informed by medical and higher education research that analyzed the prevalence and impact of gender discrimination, racial discrimination, and sexual harassment. The program aligns with the recommendations identified in the holistic student affairs framework. The intent behind this design was to go beyond awareness, and to effectively engage the institutional transformation process.

Design: Instructional methods and materials used:
Diversity Champions serve the medical school's mission and support diversity efforts across the University and the Health System. To this end, we defined five stages for the development of the Diversity Champion Program, including (1) define the roles of a champion; (2) identify and recruit champion candidates; (3) develop a champion training program; (4) train the champions; (5) assign roles to champions who will act on behalf of OUWB.

Outcomes:
Building champions that include residents, students from all 4 years, staff and faculty will help to enhance the learning environment with respect to inclusiveness, advise administration on current issues pertaining to DEI, serve as a resource for stakeholders on relevant issues, and facilitate opportunities for successes of underrepresented populations. Following recruitment and screening of applications, 25 resident, student, staff, and faculty champions have been selected.

Innovation's strengths and limitations:
Though our champions, this program will facilitate change at all levels. To reduce potential selection bias, we developed and applied a scoring rubric for objective selection. Time limitations exist for implementation as this is not anyone's primary role.

Feasibility and transferability for adoption:
Program effectiveness will be evaluated one year post implementation. Accountability of the champions by attending training and participation is essential. This program is largely transferrable to other medical education programs; however, program success relies on support from administration (and in our case, the DEI Council).

References:
1. Berray, M. 2019. Campus partnerships for promoting equity, diversity and inclusion: A case study of the NCBI Model for reducing prejudice and intergroup conflict at Florida State University Libraries. J Acad Librarianship. 45:102014. https://doi.org/10.1016/j.acalib.2019.03.002
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3. Hardeman, R., Perry, S., Phelan, S. M., Prezedworski, J. M., & Burgess, D. J. (2016). Racial identity and mental well-being: The experience of African American medical students. Journal of Racial & Ethnic Health Disparities, 3(2), 250-258.

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Zooming through Milestones: Adapting a Preclerkship Pediatric Developmental Milestone Experience to Virtual

Submission Type: Innovation Abstract
Accepted as: Poster
Region: CGEA

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Abstract Body:

Objective or purpose of innovation:
Pre clerkship students nationally rated comfort with pediatric clinical skills below most other clerkships.1 At our institution, students previously rotated through a daycare to asses developmental milestones; this was not possible due to COVID. In order to practice assessing milestones and HEADSS assessments, we developed an interactive Zoom session, facilitated by clinicians, and senior medical students.

Background and/or theoretical framework and importance to the field:
Develop virtual preclerkship experience and resources to provide experience assessing developmental milestones. Provide virtual practice with HEADSSS assessments.

Design: Instructional methods and materials used:
Faculty and students were provided with pre-course materials, including developmental milestones, reference charts, and an article on HEADSSS assessment. M2 students, (N= 150) were divided into breakout groups, with either a faculty member or an M4 assigned to each group. During the session, students reviewed videos of faculty's children demonstrating milestones. They then identified the skills demonstrated and ascertained the children's ages. Students also practiced interviewing a "teenage patient" using the HEADSSS assessment. The session culminated with a faculty member's live child on zoom, where children demonstrated milestones.

Outcomes:
Overall students rated the session very highly. The aggregate positive score in five quantifiable categories: 97.5% (negative score: 2.5%). The overall quality of the module was excellent: 5.5 (1-Strongly disagree, 6 strongly agree). Survey response rate was 62% (N of 79/127). Representative comments included: I learned a lot about the peds exam and milestones (even virtually). I appreciated all the work that went into making the videos.

Innovation's strengths and limitations:
Strengths of the curriculum included interacting with attending children, especially having "live" children, and personalizing faculty and their families. This unique activity potentially facilitated deeper connection to memorize milestones. Limitations included availability of children, and dedicated time for pediatricians to plan and facilitate sessions. During some sessions, streaming of videos was slow.

Feasibility and transferability for adoption:
This format could be easily shared with other institutions.

References:

1. Held M, Gibbs K, Lewin L, Weinstein A. Do pre-clinical experiences adequately prepare students for their pediatrics clerkship: A needs assessment to inform curricular development. Med Sci Educ. 2017;27(3):515-521. doi: 10.1007/s40670-017-0422-4.

Links to our guides and videos:

https://docs.google.com/document/d/1O7dmK8ZmblCqIEwO8BwMso4KUj-voqKoRw8weCKRmMI/edit?usp=sharing

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Incorporating Spiritual Health into Pre-Clinical Training at Wayne State University School of Medicine

Submission Type: Innovation Abstract
Accepted as: Poster
Region: CGEA

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Abstract Body:

Objective or purpose of innovation:
To better prepare future physicians to identify and address spirituality-related social determinants of health, the first year (M1) curriculum at Wayne State University incorporated a virtual three hour Spirituality in Medicine event.

Background and/or theoretical framework and importance to the field:
The majority of U.S. adults believe spiritual health impacts personal well-being and many want their physicians to discuss their spirituality.1-3 Physician surveys, however, identified lack of training in spiritual assessments as a major barrier to addressing patient spirituality in a clinical setting.3-4 Early engagement with this topic supplements development of student communication skills in preparation for both communication-focused STEP 1 questions and participation in more holistic patient care.

Design: Instructional methods and materials used:
This event included an introductory lecture,5 panel Q & A with healthcare providers and clergy, and three group breakout sessions featuring discussion of simulated patient cases. To assess student knowledge of and preparedness in addressing patients' spiritual needs based on NIDCSME competencies,6 pre- and post-surveys employing 5 point Likhert scales were distributed to the participants. Surveys underwent qualitative and frequency analysis, with 291 pre- and 271 post-event responses.

Outcomes:
Following the event, the proportion of students reporting at least 4 out of 5 confidence increased in discussing patient spirituality with differing beliefs (36% to 64%), referring a patient to spiritual care (37% to 79%), engaging with a spiritual care team (48% to 81%), and identifying whether a patient is in a spiritual crisis (0% to 59%) on the same scale. Likewise, 75% of students strongly agreed spiritual care is medically relevant compared to 47% prior to the event.

Innovation's strengths and limitations:
Smaller breakout sessions and increased focus on interactive case studies could enhance student participation, but the event clearly increased students' confidence in and appreciation for addressing patients' spirituality.

Feasibility and transferability for adoption:
This event's format is adaptable to a variety of controversial topics and successfully engages both students and local healthcare providers.

References:

1. Saguil A, Phelps K. The Spiritual Assessment. American Family Physician. 2012;86(6):546-550. doi:10.1037/e519712004-001.
2. Sajja A, Puchalski C. Training Physicians as Healers. AMA Journal of Ethics. 2018;20(7):E655-663.

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6. Puchalski CM, Blatt B, Kogan M, Butler A. Spirituality and Health: The Development of a Field. Academic Medicine. 2014;89(1):10-16. doi:10.1097/ACM.0000000000000083.

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Survey Assessing the Attitudes and Knowledge of Programs on Gender Equity

Submission Type: Innovation Abstract
Accepted as: Poster
Region: CGEA

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Abstract Body:

Objective or purpose of innovation:
The purpose of this study is to survey program directors, faculty, administration, and current and future physicians in training affiliated with Southeast Michigan hospital systems and medical schools about improvements to gender equity in medical training programs.

Background and/or theoretical framework and importance to the field:
As of 2020, more than half of medical students in the United States are women. However, numerous barriers that negatively affect women's opportunities in the medical field. These factors include a lack of support of maternity leave and childbearing, absence of mentorship programs, workplace harassment, and gendered implicit biases. Residency and fellowship programs are a key part of medical training where women must be given the agency and opportunity to grow in their field.

Design: Instructional methods and materials used:
Participants completed an anonymous survey. The questions were adopted from the ACP Recommendations for Gender Equity and Family Friendly Practices in American Pediatrics' Annual Survey of Graduating Residents. Program directors and administrators were asked about their awareness and implementation of gender equity policies in their programs. Fellows/residents were asked about benefits that were offered during their training, and what they considered to be important for future programs. Medical students were asked to rank how important certain factors/benefits were in selecting a future training program, and offer recommendations to improve gender equity.

Outcomes:
A total of 580 responses were collected. Initial results indicate an importance of proper understanding and utilization of reporting procedures for harassment, inclusion of female members on job search committees, flexible rotational and daily scheduling, and care for ill children. Future recommendations emphasized improvement in parental leave, mentorship, and implicit bias training.

Innovation's strengths and limitations:
A strength of this project is that it encompasses a wide participant pool that span all levels of the medical education realm. A limitation is the number of total participants from different specialties.

Feasibility and transferability for adoption:
This survey can be easily adopted for any institution or hospital system.

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Virtual Room of Horrors: Transforming a quality improvement education program to a virtual setting with the goal of early introduction of quality improvement and awareness of patient safety and medical errors to medical students

Submission Type: Innovation Abstract
Accepted as: Poster
Region: CGEA

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Abstract Body:

Objective or purpose of innovation:
This initiative was designed to teach medical students Quality Improvement (QI) foundations and introduce patient safety considerations while transitioning an in-person event to the virtual space.

Background and/or theoretical framework and importance to the field:
Medical error is the third leading cause of mortality (1). As a QI philosophy, Kaizen suggests that everyone in a system is responsible for recognizing, suggesting and implementing improvements (2). Medical students are a member of the healthcare team; however their awareness and knowledge of QI is lacking. We adapted our annual in-person event to a virtual setting using the Plan, Do, Study, Act (PDSA) method in compliance with social distancing.

Design: Instructional methods and materials used:
An existing in-person event based on Dr. J. Farnan's Patient Safety Room of Horrors was updated for the virtual space by staging and photographing a mock patient safety Room of Horrors, creating a Qualtrics based case, and delivering the case, discussion, and debrief with QI lecture through a synchronous Zoom format (3). The study used a quasi-experimental design of pre-test/post-test repeated measurements. QI Knowledge was tested by 5 questions focused on recognizing HRO and utilizing QI tools. Willingness and confidence in participating in QI was measured by Likert Scale. Two-sample t tests were performed.

Outcomes:
Participant knowledge was evaluated by the mean percentage of correct answers; a large improvement in the 5-question quiz for QI knowledge was seen ($p=0.00003$). Participants reported higher levels of overall QI self-efficacy after completing the program ($P= .0004$) Participants reported higher likelihood of participating in a QI project after completing the program ($P= .003$)

Innovation's strengths and limitations:
The case and debrief can be delivered effectively while maintaining student engagement and interest in QI. We have not yet assessed the long-term implications of delivering content in this format.

Feasibility and transferability for adoption:
Many programs can use the format described to transition in-person events to virtual events, throughout the pandemic and beyond.

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The Knowledge In Clinical Clerkships Course (KICC) – Continuing Clinical Education During COVID-19 and Considerations for the Future

Submission Type: Innovation Abstract
Accepted as: Poster
Region: CGEA

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Abstract Body:

Objective or purpose of innovation:
In 2020, Indiana University School of Medicine (IUSM) sought to prepare incoming clerkship students for their clinical duties, recognizing that rotations would need to be shortened to maintain student schedules.

Background and/or theoretical framework and importance to the field:
IUSM is a 9-campus school system with 364 students per year. In March 2020, all student clinical rotations were stopped due to COVID-19. IUSM created an entire curriculum which included the KICC Start course designed to prepare incoming clerkship students for their clinical responsibilities in shortened clinical clerkships.

Design: Instructional methods and materials used:
IUSM created a virtual online course which covered the Family Medicine, Medicine, Neurology, Obstetrics and Gynecology, Pediatrics, Psychiatry and Surgery core topics over a 5-week period. Using Zoom® and TopHat® technologies, clerkship directors created interactive sessions for the entire class cohort to enhance medical knowledge prior to clinical rotations. The front-loading of information permitted increased clinical emphasis during their shortened clerkships. Following each lecture block, students evaluated the impact on medical knowledge and selected which topics were mastered and which remained confusing. This permitted clerkship directors to guide their teaching within the clinical clerkships to meet students' self-identified needs.

Outcomes:
Following each block, 78-94.1% of students strongly agreed/agreed that their medical knowledge was enhanced. Within each specialty, students identified which topics were clearest and most confusing to assist clerkship directors. NBME scores have been tracked and are comparable this academic year compared to years prior, despite reduced clinical exposure.

Innovation's strengths and limitations:
This pilot showed that a comparable innovative curriculum can be implemented across a 9-campus system despite disruptions and an unconventional timeline. A "flipped clerkship" model helped guide clerkships in their core topic delivery. However, this year has been limited by COVID-19 and clerkship shortening; this will have to be further evaluated within the standard clerkship model.

Feasibility and transferability for adoption:
This model is easily applied at other institutions and may assist others with multiple campus systems.

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Financial Literacy for Students – A Crucial Tool for Success in the Medical Profession

Submission Type: Innovation Abstract
Accepted as: Oral Presentation
Region: NEGEA

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Abstract Body:

Objective or purpose of innovation:
By the end of the course, students will demonstrate increased knowledge and skills in financial literacy.

Background and/or theoretical framework and importance to the field:
Financial literacy among medical students is low, which can have long-lasting consequences. Students will gain enhanced ability to engage in healthcare policy and lead medical practices or healthcare organizations, and create a pathway for improved personal/ family well-being and security.

Design: Instructional methods and materials used:
A small-group (fifteen 4th-year medical students) spend approximately two hours per day in lecture / discussions led by a faculty member who is also a Certified Public Accountant. Some sessions include guest speakers and others involve interactive problem-solving activities. The different topics during the 4-week course include asset protection, employment, banking, investing, retirement, advisors, malpractice and risk management, contract negotiations, billing and coding medical records, income taxes and about 3 hours of discussions dedicated to student loans led by the Assistant Dean for Student Finance.

Outcomes:
All students successfully completed the final project, a personal 5-year budget plan, starting with their first year of residency training, incorporating into their budgets the concepts discussed during the class.

This is an unsolicited quote from a student who took the course: "I've often found it difficult to parse out what information is driven by data vs. opinion and if the information being shared is applicable to me or even has my best interest in mind. Most important to me is that you've created a safe space for us to be greedy and ask the questions that we truly care about."

Innovation's strengths and limitations:
This program is currently limited to a small group of students who chose to take this elective, and may have had more interest in the topic. Ideally, a topic of this importance would be incorporated into the required curriculum, so all students would benefit from the content.

Feasibility and transferability for adoption:
Nothing proprietary is discussed in this course, making it easily transferable.

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2. Year Medical Students. (https://www.physicianleaders.org/news/the-business-of-medicine-a-course-to-address-the-deficit-in-financial-knowledge-of-fourth-year-medical-students).

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Impact of Role-Play on Provider Knowledge and Communication Skills of HPV Disease and Vaccines.

Submission Type: Innovation Abstract
Accepted as: Oral Presentation
Region: NEGEA

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Abstract Body:

Objective or purpose of innovation:
This workshop aimed to improve provider knowledge, skills, and attitudes towards human papillomavirus (HPV) disease and vaccination.

Background and/or theoretical framework and importance to the field:
Discussing the human papillomavirus (HPV) vaccine with parents of young children can be challenging for clinicians. Barriers include parental beliefs, strength and quality of clinician recommendations, physician knowledge, and provider comfort levels with discussing sexuality. These areas can be improved using a role-play exercise focusing on practical application of knowledge.

Design: Instructional methods and materials used:
An interactive workshop consisting of a primary role-play session was implemented: participants took turns playing a “concerned parent” or “provider,” addressing common concerns about HPV. This was followed by a 30-minute didactic lecture and a second role-play session to practice skills. All participants completed pre- and post-questionnaires assessing knowledge and attitudes regarding HPV disease and vaccines.

Outcomes:
This workshop was done with 28 pediatric residents and medical students. Responses given in the second role-play showed significant improvement in participants’ ability to accurately pitch the HPV vaccine to parents (all p values < 0.02) Participant knowledge improved from pre- to post-intervention (33.6% to 100%, $p < 0.0025$, based on average score) as did their self-perceived abilities (3.33 to 4.37, $p<0.035$, average score based on a 1-5 Likert Scale).

Innovation’s strengths and limitations:
Strengths: An interactive approach allowed for active learning, which proved advantageous in retaining knowledge. The opportunity to immediately practice furthered skill development, and the setting of pairs complimented adult learning theory, as learners may have felt intimidated by a large group and being “put on the spot.”

Limitations: A small "n" may have led to an overestimation in the workshop's effectiveness. Knowledge and self-confidence may decline over time; booster sessions may longitudinally assess how well study participants retained information.

Feasibility and transferability for adoption:
Using provided supplemental guides and materials, this workshop is feasible and generalizable to a wide variety of educational settings.

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Challenges and solutions for creating an inclusive curriculum: A reporting system for identifying misuse of race, gender, and other social constructs in medical education

Submission Type: Innovation Abstract
Accepted as: Oral Presentation
Region: NEGEA

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Abstract Body:

Objective or purpose of innovation:
The Warren Alpert Medical School of Brown University (AMS) created a system to identify, track and respond to the misuse of social constructs in the formal curriculum.

Background and/or theoretical framework and importance to the field:
Students at AMS have reviewed lecture slides in the pre-clerkship curriculum to identify the use of race without context to describe factors contributing to disparities (1). In response to their findings, AMS created a real-time tracking system to record and respond to similar instances in the curriculum.

Design: Instructional methods and materials used:
In 2017, AMS created a confidential reporting system for tracking instances of "Curricular Opportunities" -- the inappropriate use of race, gender, and other social constructs. Curricular opportunities are submitted by students through a Qualtrics form. The medical education leadership team reviews each submission, records it in a database, and includes responses. Aggregate data is reviewed by the Curriculum Committee and students receive summaries.

Outcomes:
Since 2017, students submitted 130 unique curricular opportunity forms. Of those, 59 relate to inappropriate use of race, 26 relate to gender, and 19 relate to disability. Seven reports did not meet the definition of curricular opportunity. Nineteen reports were classified as other miscellaneous topics.

Common actions taken to address these curricular opportunities include: discussions with course leaders or other teaching faculty; the removal of inappropriate information from lecture slides or handouts; and, in rare cases, no longer inviting a faculty member to teach students.

Innovation's strengths and limitations:
Strengths include the use of accessible survey software; coordinated administrative response to curricular opportunities; identifying patterns in aggregate data; and, holding faculty accountable for the appropriate use of social constructs.

Limitations include a single institution's experience; inability for closed-loop communication with anonymous reports.

Feasibility and transferability for adoption:
A reporting system using accessible survey software can be designed to suit any institution. A

coordinated response team that includes key stakeholders in curricular and student affairs, alongside faculty development, is key to successful implementation.

References:

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Can an online discussion forum be used for asynchronous reflective practice to debrief clinical experiences during a medical student rotation in emergency medicine?

Submission Type: Innovation Abstract
Accepted as: Oral Presentation
Region: NEGEA

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Abstract Body:

Objective or purpose of innovation:
To give medical students in an Emergency Medicine elective an opportunity to asynchronously debrief clinical experiences via an online discussion forum.

Background and/or theoretical framework and importance to the field:
Discussion-based learning may improve practical clinical knowledge and learner satisfaction in medical students, compared to lecture-based or solitary learning.[1-3] Students have used online discussion to reflect on and share cognitive aspects of clinical experiences, leading to supportive interactions, but with less deep affective reflection.[4] Within Emergency Medicine, reflection serves to allow learners to process unexpected, stressful situations.[5] A digital learning platform for logging “clinical pearls” and brief “learning moments” in the Emergency Department was found to encourage reflection and sharing of knowledge and experiences within a community of practice.[6]

Design: Instructional methods and materials used:
52 Columbia University medical students were invited to post written reflections of clinical experiences during their one-week Emergency Medicine elective, between May 13, 2019 and October 30, 2020. Students posted reflections to a HIPAA-compliant online discussion forum using the Courseworks(c) platform. Peers and faculty were encouraged to respond. Posts were not assessed for grading.

Outcomes:
49/52 of students and 2/2 faculty members participated. Of 346 posts total, half were by students. Students averaged 3.27 posts per week. The majority of students’ posts contained deep affective reflection, in addition to cognitive clinical content.

Innovation’s strengths and limitations:
Strengths: This innovation is simple to execute, with minimal expense. Choice of location and timing of participation is important given asynchronous clinical shifts. Limitations: Effectiveness is limited by the faculty facilitator's availability for participation, as well as debriefing skill, and by students' experience in reflection.

Feasibility and transferability for adoption:
This framework for asynchronous debriefing of clinical experiences is quite feasible and transferable, given the universal adoption of online classroom platforms and availability of training in reflection and debriefing. Further study is needed to understand the themes raised by students, as well as student satisfaction and debriefing effectiveness, in order to inform future curricula.

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The use of deliberate practice and multi-source feedback to develop residents' feedback skills

Submission Type: Innovation Abstract
Accepted as: Oral Presentation
Region: NEGEA

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Abstract Body:

Objective or purpose of innovation:
The purpose of this innovation is to develop psychiatric residents' skills in providing feedback to medical students.

Background and/or theoretical framework and importance to the field:
Psychiatry residents are entrusted with providing feedback to medical students on their psychiatric interviewing skills. However, few residents enter postgraduate training with well-developed teaching skills or the understanding of their role in medical student education.1 Although residents-as-teachers interventions have been studied, very few studies have used video-recorded encounters to assess the acquisition of feedback skills.2

Design: Instructional methods and materials used:
A "Residents As Teachers" program was implemented with second year Psychiatry residents to develop their feedback skills. The resident observed a psychiatric interview performed by a medical student during their psychiatry clerkship. The resident's feedback encounter with the medical student was videorecorded. After the feedback encounter, the resident and medical student completed an assessment. A faculty member also viewed the videorecording, completed an assessment, and met with the resident to provide feedback on the resident's feedback skills. The faculty-of-resident, student-of-resident, and resident self-assessments were modified from a validated feedback scale.3 The exercise is repeated three time points during residents' second year to promote deliberate practice.

Outcomes:
The average feedback scores from all three sources for the residents improved over time, with the largest improvement between sessions two and three. 100% of residents reported on the post-survey that three sessions "just right" for their learning. Resident pre- and post- surveys demonstrated an increase in confidence with teaching and giving feedback. Medical students reported satisfaction with the experience.

Innovation's strengths and limitations:
The use of videorecorded feedback encounters as a tool for developing feedback skills promotes deliberate practice. One potential limitation is faculty time to review videorecordings and meet with residents. However, the investment in important feedback skills may have a multiplicative impact, both for current and future learners.

Feasibility and transferability for adoption:
The assessment tools and methods are easily transferrable to other training programs, including other non-physician programs.

References:
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Integration of Basic Science and Clinical Care Using Mechanism of Disease Maps

Submission Type: Innovation Abstract
Accepted as: Oral Presentation
Region: NEGEA

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Abstract Body:

Objective or purpose of innovation:
Medical students struggle applying pre-clerkship learning to patient care. Our innovation aimed to facilitate learner's cognitive integration of basic and clinical sciences in a focused concept map called a Mechanism-of-Disease (MoD) Map to improve clinical reasoning and adaptive expertise.

Background and/or theoretical framework and importance to the field:
Cognitive integration occurs when learners apply basic science concepts directly to patient care. Learners demonstrate adaptive expertise when they process a clinical problem, identify what they don't know, and search for information to fill gaps and re-apply that knowledge to patient care. We designed two sessions, in Y1 and Y3, to improve cognitive integration and facilitate adaptive expertise through a concept mapping technique linking basic and clinical sciences.

Design: Instructional methods and materials used:
In the Y1 activity, students worked in small groups creating an MoD Map for Vitamin B12 Deficiency, visually linking inciting factors leading to low B12 and clinical features. In the Y3 activity, students in a transition-to-clerkship course finished a partially completed MoD Map for acute rhinosinusitis after identifying key clinical features. They subsequently identified therapeutic options based on their expected mechanisms of action.

Outcomes:
We conducted a mixed methods assessment that demonstrated student satisfaction, improved learning and retention through collaborative concept mapping, increased learner confidence linking basic science and clinical care, and improved confidence in differential diagnosis and management plans for these clinical conditions.

Innovation's strengths and limitations:
Analyses indicated that student self-perceived learning and confidence benefit from the organizing framework in MoD Maps and that diagnostic and management decisions are improved. We have not yet gathered data from clerkship directors or assessments of clinical reasoning to know if the confidence learners gain translates into improved oral presentations and management abilities.

Feasibility and transferability for adoption:
These sessions required no new personnel or financial resources and were implemented within a large medical school class. The relatively few facilitators needed, the self-directed and team-oriented approach make these sessions highly transferable to other institutions.

References:

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Prioritizing restorative justice: shifting focus to repairing harm and healing community within a medical school Honor Code Consult Service

Submission Type: Innovation Abstract
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Region: NEGEA

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Abstract Body:

Objective or purpose of innovation:
In 2020 authors engaged in a task force to consider redesign of our school's honor code and student-led honor code consultation service. This service aims to process student concerns about lapses in professionalism. We aimed to address the student behaviors that negatively impact the preclinical and clinical environments by introducing restorative justice principles.

Background and/or theoretical framework and importance to the field:
Medical school is a time of tremendous growth, during which students form the foundation for their professional identity. Many students require support from colleagues to reflect on and reframe their academic and interpersonal behaviors. Prior engagement with the honor code consult service was limited due to its punitive language, which did not reflect our community's values. Restorative justice principles, which prioritize repairing harm over assigning blame and punishment (1), have been used in a wide variety of educational settings. We are unaware of similar approaches in other medical schools (2-6).

Design: Instructional methods and materials used:
A task force of 7 students and 10 faculty members met weekly throughout the summer and fall of 2020 to revise the honor code consult service. The group considered restorative justice practices from other institutions, scholarly reports, and student focus group data.

Outcomes:
The task force developed an algorithm to respond to student concerns about academic and interpersonal professionalism (7). The proposal includes training in restorative justice and conflict mediation for consult service members.

Innovation's strengths and limitations:
We present an innovative example of how restorative justice principles can promote an equitable and collaborative learning environment and lead toward positive professional identity development. As a pilot program, its effectiveness will be evaluated following this academic year.

Feasibility and transferability for adoption:
Restorative justice principles are easily adoptable in medical education. These principles are especially relevant as our community works to repair structural inequities and breaches of trust.

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Improving Diversity and Representation within the OSCE Experience

Submission Type: Innovation Abstract
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Abstract Body:

Objective or purpose of innovation:
This study aims to identify areas for improvement in diversity, inclusion and representation within the OSCE experience at a single medical school.

Background and/or theoretical framework and importance to the field:
Addressing diversity in all aspects of medical education is a particularly germane topic given this year's events. By accurately representing a medical school's diverse patient population within the objective structured clinical examination (OSCE), educators can minimize bias, reinforce a culture of inclusion, and provide a more realistic learning environment.

Design: Instructional methods and materials used:
We analyzed current OSCE cases, standardized patient (SP) demographics and OSCE case author profiles as they relate to various aspects of diversity. The OSCE cases currently in use are evaluated using factors identified in the local healthcare system's health's equity initiatives, as well as evidence-based factors that contribute to implicit bias and structurally based healthcare disparities. A subset of these factors are surveyed among OSCE case authors and standardized patients who participate in the examinations. The checklist utilized in this assessment is provided for other institutions to conduct similar assessments of their curricula. Following the tabulation of the curricular data, researchers compare it to that of the local population utilizing descriptive statistics.

Outcomes:
The differences between the curricular data and that of our community will guide recommendations to accurately reflect the local patient population within OSCEs. Results are forthcoming.

Innovation's strengths and limitations:
Strengths of this evaluation include its comprehensive assessment and generalizability to other institutions. Limitations include currently untested interrater reliability of the evaluation tool. Recognition of gaps in representation within the OSCE experience is an important initial step in prioritizing diversity, inclusion, and representation in a medical school.

Feasibility and transferability for adoption:
This tool can help institutions discover population discrepancies and identify changes they can make to prepare medical trainees to interact with diverse patient populations and foster a culture of inclusion.

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Teaching Health Equity in the Time of COVID-19: A Virtual Look through the Lens of Structural Racism

Submission Type: Innovation Abstract
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Region: NEGEA

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Abstract Body:

Objective or purpose of innovation:
To create and implement content for a virtual COVID-19 pandemic course for 3rd and 4th year medical students focused on the effect of structural racism on COVID-19 disparities.

Background and/or theoretical framework and importance to the field:
Medical schools have an obligation to address health equity (HE) training through the lens of structural racism, particularly in the context of COVID-19 health disparities. In April 2020, at the height of our clinical pandemic response, we created three HE/structural racism educational sessions which we integrated into a 4-week, virtual COVID-19 pandemic course for 396 3rd and 4th year medical students.

Design: Instructional methods and materials used:
The HE sessions 1) reviewed COVID-19 health disparities data through the lens of structural racism, 2) described the neurocognitive basis for othering and its influence on health disparities and scapegoating in pandemics, and 3) introduced skills-based frameworks that can lead to a more equitable post-pandemic world. Content delivery consisted of narrated recorded presentations, reflections, and virtual student-facilitated small group discussions.

Outcomes:
In matched pre- and post-surveys, students who participated in the virtual COVID-19 course reported significant changes in their confidence in achieving the learning objectives for the HE content and expressed high satisfaction with the virtual components. Overall, 88% agreed that the content will impact their care for patients in the future; and 87% agreed that the sessions contributed to their ability to work in disadvantaged communities.

Innovation's strengths and limitations:
Students reported high engagement in small group learning in this virtual format and valued the skills-based frameworks for addressing health equity. The use of pre-recorded lectures rather than live video lectures may have led to a lower level of engagement with didactic materials.

Feasibility and transferability for adoption:
A virtual curriculum employing reflection and small group dialogue was engaging for students, and feasible for faculty involved in a clinical/educational pandemic response. Institutions implementing similar content can easily adopt the skills-based frameworks on dismantling structural racism.

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Just in Time Teaching (JiTT) infographics Teaching Tools: App Development to Support Technologically Assisted Faculty Development

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Region: NEGEA

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Abstract Body:

Objective or purpose of innovation:
Teaching in the clinical environment mostly originates from trainees or clinicians who are not formally trained or naturally skilled in teaching. Clearly defined and geographically accessible structured postgraduate trainee/faculty teaching resources are very limited.

Background and/or theoretical framework and importance to the field:
Access of evidence-based content is limited with teaching time constraints, delivery of relevant content at a point in time, and lack of knowledge where to find the resources in the moment.

Design: Instructional methods and materials used:
We will describe an innovation that applies to faculty and trainee development as a clinician educator. An electronic infographic teaching program utilizing technology-assisted modalities prepares trainees and faculty on how to teach and foster learning in busy clinical environments. The innovation will describe transition from an automated email software distribution platform to a phone App that re-sizes evidence-based infographics for distribution on mobile devices to trainee/clinician teachers to assure true 'just in time" accessibly, not bound by any geographic, institutional or financial barriers across the world.

Outcomes:
We will share the Infographics as designed for clinical education. We will share all the intricate steps to create and maintain an innovative teaching application available to the public via a phone App. We will share preliminary implementation data, based on an internal satisfaction survey and analytics on usage and geographic distribution. All challenges will be shared as well as opportunities for partnership and collaboration.

Innovation's strengths and limitations:
JiTTs are effective resource to deliver timely relevant information to trainee and faculty. Based on lessons learned in App development, delivery and feedback from end users, future iterations will be shared to enhance content delivered and accessed. Faculty and trainees must partner and serve as champions to reinforce the use of JiTTs in their clinical learning environment.

Feasibility and transferability for adoption:
Faculty developers must expand their creativity for delivery of content and develop systems using technology-assisted modalities that can be shared among diverse medical education environments.

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Power N-A-P: A Brief Common Factors Communication Skills Session Increases Pediatric Subspecialty Trainees' Confidence in Addressing Mental Health Issues

Submission Type: Innovation Abstract
Accepted as: Oral Presentation
Region: NEGEA

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Abstract Body:

Objective or purpose of innovation:
To evaluate the impact of an interactive common factors communication skills session on pediatric subspecialty trainees' confidence addressing mental and behavioral health (MBH).

Background and/or theoretical framework and importance to the field:
Pediatric subspecialists are urged to address their patients' MBH concerns. Yet pediatricians feel inadequately prepared to provide MBH care despite educational reform. Patients of providers trained in common factors communication skills have improved mental health symptoms. However, pediatric subspecialty fellows feel less confident in their MBH communication skills when compared to subspecialty attendings.

Design: Instructional methods and materials used:
A one-hour interactive educational session on MBH communication skills was administered to pediatric residents interested in pursuing a subspecialty and pediatric subspecialty fellows at Yale University. The session included small group discussion, a didactic on a common factors approach, "Normalize-Ask-Pause," and role-play. Trainees completed a survey about their experience with the curriculum and a retrospective pre-post test rating their confidence communicating MBH concerns to patients.

Outcomes:
Eighteen of 23 participants responded to the survey (response rate 78%). Almost all the participants felt the session was a good use of their time (91%) and very-extremely effective (88%). All respondents felt the session was appropriate for their stage of learning, the right duration, and would recommend the session. All respondents felt "Normalize-Ask-Pause" was effective. There was a significant difference between those who self-reported their confidence as high before and after training for both initiating a conversation about mental health care (22% to 94%, $p<0.001$) and providing MBH guidance/information (19% to 78%, $p=0.01$).

Innovation's strengths and limitations:
This session was well received by pediatric trainees and improved their confidence addressing MBH. Further investigation of the effectiveness of this curriculum is important to determine whether it is associated with changes in provider behavior or patient outcomes.

Feasibility and transferability for adoption:
This session is easily transferable to other institutions and offers a brief intervention--which is especially important since subspecialists report time as a barrier to addressing MBH.

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Training Medical Students to Understand the Impact of Poverty Using A Virtual World Poverty Simulation

Submission Type: Innovation Abstract
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Region: NEGEA

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Abstract Body:

Objective or purpose of innovation:
Develop a Virtual World Poverty Simulation (VWPS) to train first-year Medical Students (MS1) to understand the realities of living in poverty and its impact on health.

Background and/or theoretical framework and importance to the field:
Poverty is associated with factors contributing to health inequities. Medical students receive insufficient training to understand the impact of poverty on health. Live poverty simulations have been found to improve knowledge and perceptions. However, they require multiple personnel, a large space, and significant time to complete. Virtual worlds can support problems found in conventional learning methods, such as time constraints, and require fewer resources. We developed a 60-minute VWPS to train MS1 to understand the impact of poverty.

Design: Instructional methods and materials used:
The VWPS featured five families experiencing poverty and six agencies offering resources. MS1 played the role of a family member. Service agencies were staffed by faculty facilitator. To develop the virtual world, we partnered with Virtway, a platform that provides virtual 3D online experiences. 160 MS1s participated and voluntarily completed a pre- and post-survey assessing knowledge and attitudes about poverty.

Outcomes:
283 pre- and post-surveys were completed and results were compared with t-tests. Students reported statistically significant improvements in knowledge of local resources available for people experiencing poverty ($t(281) = 3.1$, $p = 0.002$), agreement that students should explore patients' social needs ($t(281) = 2.35$, $p = 0.02$) and agreement that students should connect patients to resources ($t(281) = 2.21$, $p = 0.03$).

Innovation's strengths and limitations:
Strengths include ease to incorporate into the curriculum and positive impact on MS knowledge and attitudes towards poverty. In times of COVID19 pandemic, it provides an engaging and safe environment to teach about poverty. Data is limited to self-reported changes in knowledge and attitudes.

Feasibility and transferability for adoption:
It was feasible to develop and implement a VWPS for MS1. Once the VWPS was developed, the resources needed to run it were minimal compared to live poverty simulations.

References:
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Truth and Reconciliation: An Antiracism Curriculum

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Region: NEGEA

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Abstract Body:

Objective or purpose of innovation:
This 8-week curriculum was developed to examine how white supremacy permeates our political, social, and economic systems and how racism influences individual perceptions, decisions, and interactions. The curriculum design sought to inspire members of the medical school community to identify ways to reverse racism and health disparities.

Background and/or theoretical framework and importance to the field:
Recent attention to racial disparities has exposed the need for greater understanding and comfort discussing systemic racism and its impact on medicine. Medical education curricula often do not address the history of racism in medicine and resulting health disparities.

Design: Instructional methods and materials used:
A 13-member leadership team consisting of students and faculty developed the curriculum, which was separated into 3 blocks: (1) develop engagement skills to dialogue about race and antiracism, (2) explore roots of slavery and lynching in the US, and (3) analyze interconnections of race, medicine and health disparities. Excerpts from five books and two documentaries were discussed by 53 participants (9 faculty, 38 students, 6 staff), who met weekly in small groups. Discussion was facilitated by trained student leaders. Weekly pre/post-meeting surveys and a final survey were used to assess achievement of learning objectives.

Outcomes:
Response rates ranged from 35% (end-of-course survey) to 95% (pre-session surveys). Participants reported significant increase in confidence in conversing about race and racism with family, friends, and black colleagues. Participants were able to accurately identify examples of exploitation of black bodies for the advancement of medicine and medical implications mapped directly to systemic racism.

Innovation's strengths and limitations:
This series provided a safe, structured space to engage in difficult discussion and empowered

participants with terminology and tools to do so. Participant growth was determined and limited by personal preparation for and participation in each session (~5hrs/week).

Feasibility and transferability for adoption:
The curriculum can be easily adapted by other institutions who want to develop a culture of antiracism with an emphasis on healthcare.

References:

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Power in Numbers: The New England Pediatric Education Collaborative as a Multi-institutional Approach to COVID-19

Submission Type: Innovation Abstract
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Region: NEGEA

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Abstract Body:

Objective or purpose of innovation:
In late March 2020, medical students across the country were removed from clinical rotations, and medical educators nationwide were challenged with developing and providing a virtual curriculum for their learners.

Background and/or theoretical framework and importance to the field:
As several institutions faced similar challenges, we formed the New England Pediatric Education Collaborative (NEPEC), a virtual Pediatrics curriculum offered to all medical students from the UConn, Tufts, and Quinnipiac, to capitalize on collective faculty resources and expertise.

Design: Instructional methods and materials used:
The NEPEC curriculum was delivered via the Blackboard Collaborate platform and included didactic sessions, case-based conferences, interactive tutorials, live oral presentation practice, team-based learning clinical reasoning, journal club, and virtual simulation sessions. Each session allowed for student participation via video and audio, small breakout groups, and real-time audience polling to maximize engagement.

Outcomes:
The NEPEC resulted in 40 sessions with over 60 hours of content. A total of 71 students participated. Students rated all conferences as "excellent" or "good" for overall quality of the conference (86%), effectiveness of the conference presenter (86%), and level of active engagement of the conference (76%). Evaluation comments demonstrated successful acquisition of new knowledge, and provided constructive feedback on each session.

Innovation's strengths and limitations:
We anticipate a need for delivering virtual content for some time to come. Strengths include an online curricular product with learning objectives, conference pre-work assignments, and video recorded conferences that can be re-purposed. Thematic analysis of qualitative evaluation data has helped identify successful strategies, allowing us to maximize student engagement in current virtual clerkship components. Limitations include coordination, availability of educators to offer virtual sessions, and discrepancy between institutional rotation schedules.

Feasibility and transferability for adoption:
We believe our unique multi-institutional approach offers a depth and breadth of content, technological modalities, and student engagement tips that will be generalizable to our UME and GME colleagues, and have collaborative implications during and beyond the pandemic.

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Development of a Brief e-Learning Module for Providers Addressing Firearm Safe Storage Screening and Counseling.

Submission Type: Innovation Abstract
Accepted as: Oral Presentation
Region: NEGEA

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Abstract Body:

Objective or purpose of innovation:
To assess the acceptability and effectiveness of a self-directed e-learning module on screening and counseling for firearm safe storage.

Background and/or theoretical framework and importance to the field:
Firearms-related injury is a major public health problem in the US. Firearm safe storage practices are associated with reductions in injuries and deaths. Primary Care Providers (PCPs) in particular are well positioned to screen and counsel on safe storage practices for children and families. Unfortunately, many PCPs report low levels of knowledge about firearm safe storage.

Design: Instructional methods and materials used:
A brief (13 minute) self-directed e-learning module was developed and pilot tested with medical students. Didactic material was mixed with filmed clinical vignettes demonstrating key competencies. A series of reflection/quiz items assessed changes in knowledge and confidence, using an agreement scale. A convenience sample of medical students completed the module and participated in a focus group to determine the preliminary acceptability of the module.

Outcomes:
10 students contributed data to the in-module assessment questions and focus group. Students' mean ratings were scaled as 0 - 3 (strongly disagree to strongly agree) and reflected pre- versus post module increases in knowledge (1.0 to 2.1) confidence is asking about firearm storage (1.8 to 2.1) and confidence in discussing safe storage practices (1.0 to 2.2). Students provided detailed information about potential barriers to engaging in firearm safe storage counseling and provided feedback on the module formatting and contents.

Innovation's strengths and limitations:
The firearm safe storage screening and counseling module shows promise as an educational support for PCPs to improve their practice in this area. Testing with medical students was useful for determining initial acceptability of the module (they are full time learners) but additional testing with providers in practice is needed.

Feasibility and transferability for adoption:
This educational innovation has a high potential for adoption by providers and medical education programs. The module is brief, addresses a training gap and can be completed at the learner's convenience.

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Enhancing patient-centered care for limited English proficiency patients through Tell Me More®: A student-driven initiative to develop students' communication skills and understand the patient as a person

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Region: NEGEA

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Abstract Body:

Objective or purpose of innovation:
We aimed to include hospitalised limited English proficiency (LEP) patients in Tell Me More® (TMM®) by using medical interpreter phones (MIP). The objectives of our pilot study were to: (1) evaluate the feasibility of this approach, and (2) compare TMM® engagement between LEP and English-speaking (ES) patients.

Background and/or theoretical framework and importance to the field:
TMM® is a medical student-driven initiative to build rapport between patients, students, and the healthcare team through patient interviews and personalised posters. TMM® has the potential to address impaired patient-provider communication often experienced by populations with LEP. However, previous TMM® initiatives were offered only to ES patients.

Design: Instructional methods and materials used:
The student interviewed hospitalised LEP and ES patients with probing questions on patients' unique qualities and experiences beyond their diagnoses, then transcribed patients' stories to bedside posters, per TMM®'s established protocol. LEP patients were interviewed using MIP. At the end of their interview, patients rated TMM®'s impact on hospital stay using a five-point Likert scale.

Outcomes:
Our results demonstrate that MIP-supported TMM® is an implementable approach to enhancing patient-centered communication with LEP patients. Preliminary findings supported significantly higher TMM® participation rates for LEP versus ES patients ($X^2(1,N=45)=5.31$, $p<.05$). Reflections from student journal entries show that TMM® enriches medical student education by focusing on the patient as a person through use of empathy skills and recording of expanded social histories.

Innovation's strengths and limitations:
Strengths of our study include our novel approach to communication with LEP patients, reinforcing medical student education, and enhancing the healthcare team's understanding of the patient as a person. Our limitations are characteristic of most pilot studies, which include the need for future reproducible results with larger sample sizes and more in-depth analyses of TMM®'s impact on both patient and healthcare team.

Feasibility and transferability for adoption:
Future applications should consider other medical interpreting methods, and students' time constraints since LEP interviews described here lasted up to two hours longer than ES interviews.

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JeffDOT: a novel way to increase bedside observation

Submission Type: Innovation Abstract
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Abstract Body:

Objective or purpose of innovation:
We developed and implemented the JeffDOT app to address the challenges of workplace assessment.

Background and/or theoretical framework and importance to the field:
Currently, healthcare faculty have less time to provide formative feedback to medical students. Bedside assessments vary in frequency, structure, standardization, and quality of student evaluation. There is a need to provide an easy-to-use, systematic approach to clinical skill observation and high quality documentation of competency.

Design: Instructional methods and materials used:
The direct observation tool (DOT) delivers competency-based micro-assessments, provides real-time feedback, and documents the students' skill level using a mobile app. To use DOT, the student presents their mobile device or a QR code with the appropriate checklist to the faculty at the bedside. The observer provides commentary and rates the learners' skill level into one of five categories: cannot perform, requires direct supervision, requires indirect supervision, can perform independently, or can teach junior medical students.

Outcomes:
Since April 2019, 549 learners used the DOT during their clerkships. During first two academic years of use, 13,282 checklists were completed. Core skills assessed included history taking (3,982), physical exam (3,123), oral presentation (3,631) and counseling 2,546). Results from DOT suggest that at least 70% of students are competent to independently perform the four core skills by the end of the third year of medical school.

Innovation's strengths and limitations:
JeffDOT is an easy-to-use app which allows for a systematic approach to clinical skill observation, more effective assessment of clinical competency and high quality documentation of progress toward competence. The JeffDOT does not resolve the faculty level of comfortability with providing student feedback.

Feasibility and transferability for adoption:
This bedside direct observation tool enables effective collection of brief student assessments in the workplace. This information is particularly valuable to track student progress across the medical school curriculum. Future updates to the DOT app will focus on continuous improvement in the technology, increasing training, and expansion of use to other schools.

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A Longitudinal Curriculum on Implicit Bias and Structural Racism in a Pediatric Residency Program

Submission Type: Innovation Abstract
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Abstract Body:

Objective or purpose of innovation:
This curriculum aimed to increase and sustain trainees' awareness of and response to implicit bias and structural racism.

Background and/or theoretical framework and importance to the field:
While curricula for targeting implicit bias and structural racism have been developed in residency programs around the US, longitudinal interventions to improve trainees' awareness of and response to implicit bias are lacking. [1] Single curricular interventions such as the Implicit Association Test (IAT) have been demonstrated as useful in medical education , however, their effectiveness as a stand-alone intervention is limited. [2-3] Additionally, short-term training on topics such as bias are potentially problematic if not sustained by ongoing reflection, discussion and implementation. [4]

Design: Instructional methods and materials used:
We developed and piloted a 3-year longitudinal curriculum from 2017-2020. Starting at intern orientation and continuing through their 3rd year, residents engage in the IAT and an exclusion/inclusion exercise followed by a regularly scheduled racial awareness curriculum including conferences on implicit bias, microaggressions and systemic racism; advocacy journal clubs; grand rounds; health equity rounds; and a film series. All sessions include facilitated discussions.

Outcomes:
After the three-year pilot, we evaluated the curriculum, through surveys and interviews of graduating residents on their experiences in the curriculum. We conducted thematic analysis of their responses. [5] We identified several themes: increased confidence in discussing bias, development of a shared language to understand and process bias, and new tools to confront bias when it arose in clinical and educational environments.

Innovation's strengths and limitations:
This curriculum's primary strength was its integration into cohesive, longitudinal, sustained discussions of bias in various educational settings. It was limited by service needs of a busy academic center.

Feasibility and transferability for adoption:
This curriculum was implemented in a large academic children's hospital and required time-intensive support from leadership, faculty members, and program staff. Therefore, it may have limited transferability to other settings where resources to support are not readily available.

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Restorative Justice in Academic Medicine: Implementation of a diversity education pilot at one medical school

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Region: NEGEA

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Abstract Body:

Objective or purpose of innovation:
Since 2018, Albany Medical College (AMC) has piloted using restorative justice (RJ) practices to promote inclusion and teach health equity principles.

Background and/or theoretical framework and importance to the field:
RJ practices develop relationships through mutual respect and address community needs via three tiers (Acosta and Karp, 2018). Tier 1 practices build community. Tier 2 practices respond directly to harm and promote repair (Karp and Frank, 2014). Tier 3 practices reintegrate returnees after separation (Karp, 2015).

Design: Instructional methods and materials used:
We piloted Tier 1 RJ practices at AMC through a voluntary program with medical students. Every circle includes group gathering (virtually or in person), a trained circle keeper, a talking piece to ensure parity between voices, and shared agreements. Efficacy was measured via surveys before and after circle sessions.

Outcomes:
In 2018, circle practice was added to medical student orientation to help build community, enhance community engagement, and teach students about the social determinants of health. This activity, titled Social Determinants of Albany's Health (SoDAH), was positively appraised; 98.6% of students reported finding the circles "beneficial/extremely beneficial." In response to students' enthusiasm, we are piloting the expansion of circle opportunities to PA students, residents, and diverse affinity groups.

Innovation's strengths and limitations:
RJ circles build community in person and virtually. They constitute an effective model, particularly for handling sensitive subjects, that promotes inclusion and a more restorative means of addressing harm at a low financial cost.

RJ can be a time intensive, yet high-yield practice. Time is often a luxury in academic medical centers.

Feasibility and transferability for adoption:
Adoption of RJ in US medical schools has grown, as evidenced by the AAMC's launch of RJAM, an

initiative applying RJ principles to challenging aspects of medical education (Acosta and Karp, 2018). RJ has proven feasible at AMC, and this program has inspired further RJ implementation here.

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Enhancing Resident Diversity and Equity by Addressing Economic Disadvantage Among Applicants

Submission Type: Innovation Abstract
Accepted as: Oral Presentation
Region: NEGEA

Authors:
Debra Weinstein, Mass General Brigham

Abstract Body:

Objective or purpose of innovation:
Addressing economic barriers impacting residency choice

Background and/or theoretical framework and importance to the field:
Higher education, including medical school, often provides financial aid that facilitates economically disadvantaged individuals accessing this education. Need-based aid has not been part of graduate medical education: residency matriculants are generally paid on an institution-based salary scale, regardless of their financial circumstances (debt burden, dependents, etc.). Applicants with limited resources – disproportionately those who are underrepresented in medicine (UiM) – may be excluded from high-cost locations, as documented on our annual post-match applicant survey.

Design: Instructional methods and materials used:
In 2018 Mass General Brigham initiated a recruitment stipend for economically disadvantaged residents as a 3-year pilot. In order to impact applicants' choice of residency, clear eligibility criteria must allow individuals to know if they qualify for the stipend prior to submitting their rank list. In Year 1, prior approval for AAMC's Fee Assistance Program was the sole eligibility criterion; subsequently, having had a Pell Grant or a Loan for Disadvantaged Students were additional qualifiers (i.e. any one of the three). Qualifying matriculants to 3+-year residencies receive $10,000 above the standard salary annually for three years.

Outcomes:
22 matriculants (~5%) qualified for the stipend in 2019, and 51 (11%) in 2020. Stipend recipients were significantly more diverse than other recruited residents: ~¾ minority and ½ UiM. Survey results suggest the stipend program positively impacts ranking decisions and the affordability of Boston. Because financial need analysis is not possible, eligibility criteria are arbitrary and suboptimal. Long-term sustainability of funding is not certain.

Innovation's strengths and limitations:
Positive impact on equity and diversity. Because financial need analysis is not possible, eligibility criteria are arbitrary and suboptimal. Long-term sustainability of funding is not certain.

Feasibility and transferability for adoption:
The program is transferable to other institutions based on a) availability of funds, or b) willingness to fund out of the total resident salary budget, so that resident salary levels reflect individual economic need.

References:
N/A

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Validate entrustable professional activity (EPA)-based assessment in pathology residency training for common on-call activities.

Submission Type: Innovation Abstract
Accepted as: Poster
Region: NEGEA

Authors:
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Abstract Body:

Objective or purpose of innovation:
The purpose of this study is to use entrustable professional activities (EPAs) evaluate a resident's performance of a specific activity and link to competencies, which can inform assigning graduated responsibilities (e.g. taking call).

Background and/or theoretical framework and importance to the field:
At the University of Vermont (UVM), the Clinical Competency Committee (CCC) decides whether a resident is competent to take call, but it is currently operating with limited data. This study aims to implement and validate EPAs in a common on-call duty of performing an intraoperative consultation

Design: Instructional methods and materials used:
The proposed use of the EPAs in this study is to provide data to the CCC to inform decisions about a resident's competency to take call. This validation study follows the Kane Framework (scoring—generalization—extrapolation—implication) by providing multiple pieces of evidence for the CCC to review. Residents' performance of intraoperative consultations during their surgical pathology rotation will be evaluated by multiple EPA-based formative assessments (scoring). Residents will be assigned an entrustment level at the end of the rotation (generalization). Formative and summative assessments will be reviewed by the CCC (extrapolation, implication) to determine readiness to take call. The impact of EPAs will be assessed by periodic surveys to all participants.

Outcomes:
Entrustment is an intuitive, but novel, anchor for assessment. EPAs will promote direct observation of trainees, allowing faculty to provide more specific and timely feedback. EPAs should provide objective data to the CCC, and should benefit residents by setting clear expectations and increasing resident confidence in performing intraoperative consultations.

Innovation's strengths and limitations:
This is the first validation study of EPAs in pathology training. Given the small number of residents in this program, there may be insufficient survey data to demonstrate an impact. The COVID-19 pandemic has impacted resident education in frozen assessment, which may be a confounding factor in this study.

Feasibility and transferability for adoption:
This study will inform a national study of four EPAs in pathology residency.

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7.Peters H, Holzhausen Y, Boscardin C, et al. Twelve tips for the implementation of EPAs for assessment and entrustment decisions. Med Teach. 2017;39:802-807.

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eBite: A Medical Education Blog for a Global Community of Learners

Submission Type: Innovation Abstract
Accepted as: Poster
Region: NEGEA

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Abstract Body:

Objective or purpose of innovation:
The disruptions in medical education and faculty development delivery due to the public health concerns during the Spring of 2020 rapidly led to re-establishing educational discourse through web-based tools including text-driven media such as blogging1. Specifically, educational blogs enrich learning experiences comparable to online discussion forums with the added benefit of attractive content presentation using text, images, audio, and video, appealing to a variety of learning preferences2. We developed the educational blog eBite with the purpose to (1) provide preparatory content and (2) reference material for enhancing the effectiveness of faculty development sessions. eBite is easy to access from anywhere on any device and enhances learning and reflection of target audiences at their own pace as well as interested readers worldwide.

Background and/or theoretical framework and importance to the field:
Contextualized by sociocultural and constructivist theories, a community of learners establishes rapidly as readers engage with the content and exchange reflections and opinions in the comment section3.

Design: Instructional methods and materials used:
eBite blog entries with discussion prompts are posted by the medical education expert either prior to or after a corresponding faculty development session to enhance and review concepts discussed.

Outcomes:
Initial data indicated benefit through (1) mental accessibility of complex topics, (2) stimulating critical thinking, and (3) reflection on in-person-sessions supported by eBite content. Additional value is establishing instant rapport with the audience, as eBite is introduced in the initial email preceding an upcoming session. Frequent posting is necessary for engaging the audience beyond the session.

Innovation's strengths and limitations:
Using multimedia display options and blog functionality, a growing community of learners/educators of all levels can connect with each other, expanding each other's horizons.

Feasibility and transferability for adoption:
The educational blog eBite is an effective tool promoting deep learning which can easily be adopted by medical educators to advance the educational discourse of faculty development in a global community.

References:
1. Lu, D., Ruan, B., Lee, M., Yilmaz, Y., & Chan, T. M. (2020). Good practices in harnessing social media for scholarly discourse, knowledge translation, and education. Perspectives on medical education, 1-10.
2.Vai, M., & Sosulski, K. (2015). Essentials of online course design: A standards-based guide. Routledge.
3. Steinert, Y. (Ed.). (2014). Faculty development in the health professions: a focus on research and practice (Vol. 11). Springer Science & Business Media.

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Rx/Museum: Art and Reflection in Medicine. Fostering clinician well-being and a more humanistic practice of medicine through visual art and reflective pedagogy.

Submission Type: Innovation Abstract
Accepted as: Poster
Region: NEGEA

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Abstract Body:
Objective or purpose of innovation:

- To provide a free, web-based medical humanities curriculum featuring a curated series of 52 artworks with essayistic reflections.
- To create space for self-care.
- To strengthen communication and empathy.
- To encourage engagement with the arts and humanities in medicine.

Background and/or theoretical framework and importance to the field:
The COVID-19 pandemic has spurred an urgent need to address physician burn-out. Guided visual art exercises are a widely disseminated method for fortifying wellness and resilience among medical providers. While clinicians are often enthusiastic about engaging with the arts, they may feel intimidated or are unable to attend organized opportunities. Rx/Museum brings the museum to the physician in an accessible virtual environment through an interdisciplinary lens combining clinical medicine, medical anthropology, art history and social justice.

Design: Instructional methods and materials used:
Every Monday for a year, subscribers are emailed an artwork from Philadelphia Museum of Art, Barnes Foundation, or Slought Foundation. Each accompanying essay examines traditionally challenging themes such as managing uncertainty, nuance, ambiguity, death, illness, and suffering. Subscribers are encouraged to explore artworks by theme and generate small-group discussion with the content.

Outcomes:
Since launching in July 2020, over 4,500 individuals have visited the Rx/Museum site and more than one thousand have subscribed to the weekly listserv. Essays receive up to 400 readers per week with an average session duration of three to four minutes.

Innovation's strengths and limitations:
Rx/Museum unites stakeholders across the spectrum of medical training via the visual arts and written reflection. At year's end, Rx/Museum will be a self-sustaining curriculum that can be accessed and applied in a variety of clinical and educational contexts. An inherent limitation of Rx/Museum is the challenge of meaningfully engaging with art outside of a gallery setting.

Feasibility and transferability for adoption:

Rx/Museum facilitates an expanding subscriber cross-section of health professionals, students, and scholars from across the globe. While the Rx/Museum collection is unique to Philadelphia, the collaborative model is highly transferable.

References:

1. Gowda, Deepthiman et al. "Art as Sanctuary: A Four-Year Mixed-Methods Evaluation of a Visual Art Course Addressing Uncertainty Through Reflection." Academic medicine : journal of the Association of American Medical Colleges vol. 93,11S Association of American Medical Colleges Learn Serve Lead: Proceedings of the 57th Annual Research in Medical Education Sessions (2018): S8-S13. doi:10.1097/ACM.0000000000002379.
2. Liu, Emily Yang et al. "The long-term impact of a comprehensive scholarly concentration program in biomedical ethics and medical humanities." BMC medical education vol. 18,1 204. 28 Aug. 2018, doi:10.1186/s12909-018-1311-2.
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Clinically Integrated Advanced Basic Science

Submission Type: Innovation Abstract
Accepted as: Poster
Region: NEGEA

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Abstract Body:

Objective or purpose of innovation:
Deliver clinically integrated advanced basic science (ABS) education to senior medical students in a flexible, online format.

Background and/or theoretical framework and importance to the field:
Traditionally medical schools offer basic science education during the preclinical years. Although clinical topics have been incorporated into preclinical curricula, basic sciences have not been formally taught in clinical years. Thomas Jefferson University created ABS courses to integrate basic science curriculum during the senior year.

Design: Instructional methods and materials used:
ABS courses were designed to address basic science curricular threads that were de-emphasized during clinical years. Their expanded content explicitly applies to clinical decision making. Universal scientific principles such as evidence based medicine were incorporated into all courses. Courses are offered virtually through the Canvas learning management system (LMS). The courses have a hybrid approach of self-directed and case-based learning to allow students to reinforce basic science principles while applying them to clinical scenarios. Courses are in a two-week, Pass/Fail format and students are required to take at least one ABS course.

Outcomes:
36 senior students took an ABS course in December 2019 and March 2020; 26 responded to post-course evaluations. 85% would recommend the course to fellow students, 76% thought the course would positively impact their future career, and 88% thought there was sufficient direction and faculty interaction. 100% thought that more online asynchronous courses should be offered. Further data analysis is pending.

Innovation's strengths and limitations:
Strengths: ABS courses seamlessly build on and integrate basic science into clinical context. The flexible format and delivery allows students control over their schedule, especially during residency application season. The virtual format was critical during the pandemic.

Limitations: Educators need to teach and build courses using new technologies requiring design support. Small class sizes are required to accommodate small group learning. The virtual format may limit faculty/student interaction and feedback.

Feasibility and transferability for adoption:
ABS courses are easily adoptable by any institution through their own LMS.

References:

1. Pangaro, L, The Role and Value of the Basic Sciences in Medical Education: The Perspective of Clinical Education -Students' Progress from Understanding to Action, JIAMSE, 2010, 20:3, 307-313
2. Spencer AL, Brosenitsch T, Levine AS, Kanter SL, Back to the basic sciences: An innovative approach to teaching senior medical students how best to integrate basic science and clinical medicine, Acad Med, 2008, 83, 662 – 669.

3. Association of American Medical Colleges. Curriculum Directory. Available at: (http://services.aamc.org/currdir/section2/schematicManagerRemote.cfm).

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Interprofessional Students and Faculty Collaborate to Restructure Medical Student Research

Submission Type: Innovation Abstract
Accepted as: Poster
Region: NEGEA

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Abstract Body:

Objective or purpose of innovation:
Students and faculty from the College of Medicine, School of Public Health, and Graduate School collaborated to 1) assess medical student attitudes about research opportunities, 2) develop research skills with required curricular activities 3) improve communication about research opportunities and 4) create a centralized medical student research database.

Background and/or theoretical framework and importance to the field:
Research experience and meaningful publication are vital to successful residency applications. The transformation of Step 1 to Pass/Fail has increased pressure on students and faculty to accelerate research activities that lead to presentation and publication. SUNY Downstate has a long history of strong student-faculty reciprocal mentoring for curriculum strengthening.(1) Many schools have adapted longitudinal research components to strengthen the curriculum.(2) Student-faculty coproduction transforms learners into engaged participants.(3)

Design: Instructional methods and materials used:
We distributed a Qualtrics survey to evaluate research opportunities and barriers in medical school. An interprofessional faculty–student Research Education Group (REG) was created to identify gaps in curricular resources related to student research, research methodology, biostatistics, and integration of evidence-based medicine across the four years. Three workgroups meet bi-monthly: Communication, Curriculum and Faculty Development.

Outcomes:
Survey responses from 203 medical students provided data on research activities, outcomes, and barriers experienced by those who did not do research. Data analysis contributed support for curriculum renovation. In only three months, the REG developed required curriculum on research planning, data evaluation, writing, and Big-Data. A new longitudinal hypothesis driven research requirement culminating in preparing a submission for publication has launched. They created optional, virtual "luncheons" to introduce mentors and improve communication.

Innovation's strengths and limitations:
The interprofessional student-faculty collaboration was essential to develop longitudinal and individual curricular components to drive student research and improve research competencies,(1) despite current challenges of remote Covid-19 curriculum implementation. Developing a web-based curriculum structure requires instructional technology support.

Feasibility and transferability for adoption:
Developing a strong student-faculty and interprofessional collaboration for optimal co-production to attain student research competencies has potential in any institution.

References:

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Teaching What Matters: Integrating Student-Led Surgical Disparities Education into the Surgical Clerkship

Submission Type: Innovation Abstract
Accepted as: Poster
Region: NEGEA

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Ari Brooks, Perelman School of Medicine at the University of Pennsylvania

Abstract Body:

Objective or purpose of innovation:
To increase learner awareness of surgical health inequities and provide learners with assessment frameworks and interventions to address these disparities.

Background and/or theoretical framework and importance to the field:
Surgeon awareness of surgical health inequities is low (1,2). To combat this, we created a surgical disparities learning module for the surgical clerkship.

Design: Instructional methods and materials used:
This module consisted of asynchronous pre-readings on surgical disparities frameworks (3,4), and a pre-recorded prostate cancer lecture. Synchronous material included a 1-hour case-based discussion, based on the pre-readings and adapted from the AUA Medical Student Curriculum (5), that were led by rotating groups of upper-level student facilitators.

Levels 2a (attitudes) and 2b (knowledge) of Kirkpatrick's model for programmatic evaluation were used.6 Responses to pre- and post-course questionnaires were analyzed by Pearson's chi-squared test. Free-text responses were thematically analyzed based on grounded theory methodology (7).

Outcomes:
Eighty-one learners completed the module and surveys (response rate: 65% Pre-, 26% Post-). Responses indicated post-module increased perception of having a framework to assess surgical disparities (87% vs 20%; $p<0.01$) and greater knowledge of interventions for addressing disparities among learners (78% vs 22%; $p<0.01$). Thematic analysis revealed increased ability to describe prevalence and causes of health disparities and to identify a framework for assessing causes of disparities. Almost all students agreed disparities-related knowledge would make them a better physician (96%).

Innovation's strengths and limitations:
This module focused on providing a framework for assessing disparities, thus it is adaptable to various surgical topics. Student led teaching both allows upper-level students to practice teaching skills while facilitating peer-based discussions of student experience with surgical disparities. Limited post-survey responses is a limitation to the program evaluation.

Feasibility and transferability for adoption:
This module focused on providing a framework for assessing disparities, thus it is adaptable to various surgical topics. Asynchronous reading and pre-recorded lectures make the material transferable to other

institutions. We provide an example of effectively incorporating health disparities teaching into medical school curricula.

References:
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7. Charmaz K. Constructing Grounded Theory: A Practical Guide through Qualitative Analysis. SAGE; 2006.

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An Interdisciplinary and Virtual Health Policy Curriculum for Health Professions Students

Submission Type: Innovation Abstract
Accepted as: Poster
Region: NEGEA

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Daniel Ehlke, SUNY Downstate School of Public Health
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Abstract Body:

Objective or purpose of innovation:
To develop a peer-facilitated model for teaching health professions students about health policy and equipping them to become student advocates.

Background and/or theoretical framework and importance to the field:
Health policy education is often inaccessible to health professions students, but is invaluable given the complexity of the US healthcare system and existence of health inequities, exacerbated by COVID-19. Our multidisciplinary team of public health and medical students adapted an existing health policy curriculum into a student-driven, flexible virtual elective to meet interdisciplinary educational needs and interests of health professions students across schools at SUNY Downstate while also engaging with health policy at a local level in Brooklyn.

Design: Instructional methods and materials used:
The adapted curriculum consists of pre-readings and select components from twelve asynchronous lectures and four synchronous competency-based sessions, originally developed by faculty using the Kern model. Our elective is the first student-driven course using this curriculum template. It includes a peer-moderated discussion forum, policy-based writing assignment, and culminates in a local advocacy event. Through student leadership, we have created an individualized and dynamic learning experience implemented across diverse educational contexts.

Outcomes:
Pre- and post-surveys evaluate satisfaction (Kirkpatrick Level 1), knowledge gained (Level 2), and competencies developed (Level 3) for sessions. Results of the previous 36-participant faculty-led elective showed a statistically significant increase in attendants' reported confidence in their knowledge of health policy topics taught. Surveys from our student-run elective will allow us to evaluate relative efficacy of peer facilitation in health policy education.

Innovation's strengths and limitations:
Strengths of our curriculum include mentorship from health policy faculty and adaptation of a successful curriculum, which utilizes the evidence-based CDC framework. Limitations include difficulty coordinating the curriculum in parallel with ongoing coursework across multiple health programs.

Feasibility and transferability for adoption:
This curriculum is readily transferable across health professions schools given use of virtual modules accessible at individual paces and fluidity of topics, which can be adapted to current policy events across the country.

References:
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The Underrepresented, Low-Income, and First Time (UpLIFT) Project: A comprehensive, open-access guide to medical school admissions aimed to increase educational equity for underrepresented pre-medical students.

Submission Type: Innovation Abstract
Accepted as: Poster
Region: NEGEA

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Abstract Body:

Objective or purpose of innovation:
Deliver comprehensive, up-to-date information about preparing for medical school via an open-access web-based platform.

Background and/or theoretical framework and importance to the field:
Minority, first-generation, and low-income students continue to be underrepresented among medical school matriculants[1]. Roughly 50% of matriculating students each year came from the top quintile of household income[2]. One factor contributing to this disparity is a lack of reliable and affordable resources necessary for navigating the pre-medical and application process[3,4]. Open-access advising resources can address these issues.

Design: Instructional methods and materials used:
Twenty-six medical students applied a curriculum development model to determine needs, develop objectives, design and create The UpLIFT Guide, a comprehensive resource for medical school applicants, organized temporally from completing pre-medical coursework to navigating financial aid processes[5]. The resource includes ready-to-use email templates, budget spreadsheets, and scholarship resources. It was disseminated via the website (https://uplift.guide), social media, and outreach to undergraduate pre-health advisors. Downloads of the resource and website traffic were recorded, and end-user feedback was collected.

Outcomes:
The UpLIFT Guide launched online on August 27, 2020. Over 13 weeks, the resource was viewed 7223 times by 3373 unique users, downloaded 303 times, and used by 34 undergraduate institutions. The Guide has also been paired with national mentorship efforts and endorsed by medical school faculty and pre-health advisors at several universities. Preliminary reviews indicate that this guide fulfills the need for accessible advising.

Innovation's strengths and limitations:
Strengths of this innovation include its ability to increase educational equity by providing ready-to-use materials specific for underrepresented pre-med applicants and its "crowd-sourcing" model to compile

reliable advice. The limitations are that the resource requires internet access, which may be a barrier for some. Qualitative feedback and admissions outcomes are forthcoming.

Feasibility and transferability for adoption:
The open-access resource is easily accessible online to pre-health offices and interested students. We continue to build relationships with pre-health advisors and work with national mentorship organizations to connect applicants with in-person or virtual mentors.

References:

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Conscious Efforts to Address Unconscious Biases in Healthcare Delivery Training: The iPAC (integrated Pain and Addiction Curriculum) Program at Stony Brook Renaissance School of Medicine

Submission Type: Innovation Abstract
Accepted as: Poster
Region: NEGEA

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Abstract Body:

Objective or purpose of innovation:
To increase learners awareness of inherent implicit and explicit biases in physicians.

Background and/or theoretical framework and importance to the field:
The iPAC curriculum (integrated Pain and Addiction Curriculum) focuses on pain and opioid use and was integrated longitudinally across our existing LEARN curriculum1, first establishing baseline knowledge and skills then gradually building on this foundation for students to apply and practice.

Design: Instructional methods and materials used:
We developed three case vignettes with the goal of demonstrating how biases may impact care and medical decision-making in patients with pain and/or substance use disorders. The inaugural iPAC curriculum was implemented for incoming students during the Transition to Medical and Dental School course via a 2-hour Zoom class session. Prior to the session, a survey consisting of components from validated surveys such as the Race Implicit Association Test (IAT)2 was administered. The cases were presented using a progressive case disclosure approach and a voice-over PowerPoint of audio interactions between a physician and three patients requesting early prescription refills. Audience response questions were embedded throughout the presentation polling students for their thoughts in response to the unfolding cases.

Outcomes:
Over one quarter (26.6%) of the participating Medical and Dental students (n=173) were found to have no preference towards African or European Americans which is higher than the participants on the IAT website (18%).2 Audience response data indicated students were more comfortable prescribing an early opioid medication refill to an elderly Caucasian woman patient (23% comfortable), who in fact did not need it, compared to the other two patients; a Caucasian male (2%) and an African American male (1%).

Innovation's strengths and limitations:
This curriculum highlights topics that are important both locally and nationally. Our data represents baseline data of one cohort of students at the beginning stages of the curriculum implementation.

Feasibility and transferability for adoption:
iPAC is a multimodal, longitudinal, and integrated curriculum that can be implemented at various stages of training appropriate for the learner.

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NEGEA Special Interest group (SIG): Health Humanities as Teaching and Learning Strategy

Submission Type: Innovation Abstract
Accepted as: Poster
Region: NEGEA

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Abstract Body:

Objective or purpose of innovation:
To cultivate a regional Community of Practice (CoP) for medical educators interested in health humanities (HH) and reflective practice as a pedagogical framework. This community can support and collate interests of diverse inter-professionals who collaborate on projects and share ideas. In addition, engaging in reflective practices and nurturing one's interest in the humanities builds resilience to flourish in healthcare environments.

Background and/or theoretical framework and importance to the field:
This reflective practice theoretical framework, to develop three types of reflection: in-action, on-action, for action, leads to a parallel interest in HH as a prompt for reflective practice. HH programming explores the arts and humanities as both formal and informal content and how this can inform physician-patient relationships, cultural humility, and physician well-being.

Design: Instructional methods and materials used:
The SIG, approved by the NEGEA Steering Committee in April 2018, initiated interest among attendees at a regional meeting lunch and learn. Based on individuals that came forward formed a small task force was formed across 5 NEGEA medical schools to plan a kickoff event .

Outcomes:
The inaugural virtual event took place in July 2019. Since that event we have had five virtual events in 2020 and one planned for early 2021. Participation crosses AAMC regions and a ½ day symposium resulted in 250 participants. Each event is framed by different humanities formats to prompt discussion on content and teaching skills. The SIG has about 100 'members', with open enrollment.

Innovation's strengths and limitations:
Our intent is to display early strengths of our CoP SIG model to utilize HH as a teaching and learning pedagogical tool with diverse programs. A limitation is how to reach the continuum of medical education: students, trainees and faculty and foster relationships for a successful vision within required curriculum.

Feasibility and transferability for adoption:
Our goal is for this regional SIG to exemplify a partnership and collaboration with other AAMC regions to support successful programming to serve all AAMC member institutions.

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Ready for Sub-Is – An EPA-based gateway training to entrust learners for sub-internship electives

Submission Type: Innovation Abstract
Accepted as: Poster
Region: NEGEA

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Abstract Body:

Objective or purpose of innovation:
Create a curriculum focused on advanced clinical skills (EPAs 4, 6, 8, and 10) to prepare students for better sub-internship performance.

Background and/or theoretical framework and importance to the field:
The competencies needed to enter and succeed in sub-internship and beyond are not clearly defined in the literature. The context of the COVID-19 pandemic created further need to focus on student preparation at this critical juncture given the limitations they have faced during their core clerkship year. We realigned our post-core- clerkship clinical skills training to provide additional practice opportunities and advanced skill training before students move to the next phase of the curriculum. Additional enrichment opportunities will be offered as needed based on performance, rendering this course a gateway point in our curriculum.

Design: Instructional methods and materials used:
Key course content was developed by reviewing relevant educational literature and surveying needs/perspectives of sub-internship directors as well as third- and fourth-year students. This three-day, remote pilot is a hybrid (synchronous and asynchronous) course designed to promote advanced clinical reasoning. There is a different case each day. The morning begins with an Objective Structured Clinical Examination (OSCE), which flows into an interactive online module.

Outcomes:
To examine the impact of the course and growth in clinical skills, we will conduct pre-/post- tests within the course, evaluate OSCE scores, and assess sub-internship performance through workplace-based assessments and final evaluations compared to historical/contemporary controls. Student and sub-internship director surveys will further help us gain insights into course efficacy and satisfaction.

Innovation's strengths and limitations:
Strengths of the innovation include a formative approach to honing clinical skills and focusing on advanced EPA skills required for sub-internship experiences. Challenges include finding time within the curriculum to include this coursework and optimizing learning clinical skills in the remote, digital setting.

Feasibility and transferability for adoption:
For medical schools that already use OSCEs and a flexible Learning Management System in their curriculum, adaptation to align with preparation for sub-internships is possible.

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"If not now, When? Confronting Racism and Health Inequity in the COVID Era" Conference Reflections

Submission Type: Innovation Abstract
Accepted as: Poster
Region: NEGEA

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Abstract Body:

Objective or purpose of innovation:
The student-organized conference created a space for community voices to shift the narrative of COVID-19 disparities beyond pre-existing conditions towards a critical understanding of how systemic oppression creates the health inequities witnessed during this pandemic.

Background and/or theoretical framework and importance to the field:
Students organized in response to the lack of education regarding COVID-19 disparities. "If not now, When? Confronting Racism and Health Inequity in the COVID Era" ("INNW"), is part of an annual student-led conference, Social Justice in Health, which aims to enrich our curriculum by direct engagement with our community.

Design: Instructional methods and materials used:
The conference included a keynote address from a health justice historian, panel discussions with community organizers, breakout workshops with civil rights activists, and closing remarks from the NYC Public Advocate. Sessions addressed issues including structural oppression during the pandemic, advocacy, and the future of pandemic response. We identified steps to transform institutions that create and perpetuate these disparities.

Outcomes:
"INNW" featured 200 participants from across the country. Nearly all respondents agreed that the conference deepened their understanding of the roots and manifestations of structural racism, particularly in the context of pandemics.

Innovation's strengths and limitations:
Highlighting the perspectives and lived experiences of community members allowed us to address the real, rather than perceived, needs of local neighborhoods. Breakout sessions and panels mobilized participants to become more than passive listeners. The virtual format provided accessibility to participants and speakers without travel/expense limitations. Survey collection was poor in comparison to attendance. Our survey data is not representative of participant demographics nor the breadth of ideas that were discussed.

Feasibility and transferability for adoption:
The conference featured NYC activists who analyzed systemic health injustices at the local level. However, these organizational principles and thematic contents can be adopted by medical institutions across the country to teach students how to critically analyze COVID-19 disparities in their own communities.

References:
N/A

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"The Patient Will See You Now:" Harnessing Telehealth Technology to Implement a Synchronous, Virtual Clinical Rotation in the Age of COVID

Submission Type: Innovation Abstract
Accepted as: Poster
Region: NEGEA

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Abstract Body:

Objective or purpose of innovation:
Our primary aim was to implement a virtual clinical rotation harnessing telehealth technology to allow for real-time patient encounters. Our secondary aim was to establish the acceptability of this curriculum as we approximated the clinical precepting relationship in a remote format.

Background and/or theoretical framework and importance to the field:
In this unprecedented COVID-19 pandemic, medical educators were tasked with designing curricula allowing students to enhance clinical skills in a remote setting and providing resident trainees with ongoing experience as teachers. Using telehealth and virtual meeting technologies, we designed a student elective to continue to provide these opportunities.

Design: Instructional methods and materials used:
Content in our virtual rotation was delivered via multiple technological modalities, including remote meeting software and camera-equipped mobile tablets. Students were paired with resident preceptors who were on-site and who brought the mobile tablets into patient rooms for each encounter. The student conducted the patient interview and observed the resident's physical exam via telehealth. The two then discussed the case and the student presented the patient to the attending physician via the mobile tablet. Feasibility and acceptability were assessed through student evaluations of the rotation and by surveying the resident preceptors.

Outcomes:
In post-rotation evaluations, students reported the virtual elective allowed them to refine their history-taking skills and to practice presenting synthesized differential diagnoses as they would on an in-person rotation.

Innovation's strengths and limitations:
This innovative elective demonstrates telehealth can promote teaching and learning educational experiences when the learner is remote. Limitations include longer patient encounters due to working a new technology into patient flow.

Feasibility and transferability for adoption:
Harnessing telehealth, telesimulation, and remote meeting technologies is a feasible way to ensure learners continue to hone their clinical skills even when they are unable to be physically present, and can be translated to any educator-learner dyad who are equipped with a tablet/phone and internet abilities.

References:

Rose S. Medical Student Education in the Time of COVID-19. JAMA. 2020;323(21):2131–2132.

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Immersive Legislative Advocacy: Piloting a Novel Elective to Develop Medical Student Advocates

Submission Type: Innovation Abstract
Accepted as: Poster
Region: NEGEA

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Abstract Body:

Objective or purpose of innovation:
To design an elective course for medical students that enhances their understanding of the legislative process and empowers them to advocate for policies that promote health equity.

Background and/or theoretical framework and importance to the field:
Several physician societies recognize advocacy as an essential responsibility of physicians. Many have called for physicians to take a more active role in policy, politics, and legislation. However, while many institutions have developed brief lecture- or skills-based advocacy experiences, the literature on advocacy training in medical education demonstrates a dearth of programs that directly engage medical students in the legislative process.

Design: Instructional methods and materials used:
We piloted an elective course on legislative advocacy for medical students. The course consisted of eleven 1.5-hour sessions, each designed to develop a specific skill for effective advocacy, such as how to review policy evaluations, identify bills that would promote health equity, elaborate talking points, and draft one-page summaries of bills. The course culminated in required meetings with state legislators to advocate for two bills that students identified.

Outcomes:
The course enrolled 35 students. Students identified two bills on police reform active in the state legislature's current session and collectively met with approximately 100 state legislators to advocate for them. At the course's completion, students reported an enhanced understanding of the state's government systems, strong attitudes that physicians have an important role in legislative advocacy, and competence in a variety of advocacy skills.

Innovation's strengths and limitations:
The course successfully engaged a cohort of students in the legislative process, beyond pedagogical training. However, it was limited by funding and the availability of legislators, who often limited meetings to constituents from their district.

Feasibility and transferability for adoption:
The elective was adapted from a similar experience at the University of Michigan. It can be delivered fully online (as we did) or in-person, requiring only the availability of student preceptors and a faculty adviser to implement it.

References:
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Teaching Health Equity by Neighborhood: Exploring the 15 year Life Expectancy Gap at the School of Medicine Doorstep

Submission Type: Innovation Abstract
Accepted as: Poster
Region: NEGEA

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Abstract Body:

Objective or purpose of innovation:
Students have clinical rotations in neighborhoods with starkly different life expectancies despite being within the same 8-mile radius. We aim to equip students with skills to assess neighborhood health assets and challenges through a lens of health equity.

Background and/or theoretical framework and importance to the field:
The module is framed around the astonishing 15-year life expectancy gap between the neighborhoods of the School of Medicine (SOM) and the socioeconomically vulnerable neighborhoods of the North Hartford Promise Zone (NHPZ). Students explore stakeholders' perceptions of contributing factors and the physician's role in reducing the gap.

Design: Instructional methods and materials used:
Students receive background material on the history of the NHPZ, including its redlining. Students receive instruction on health asset mapping using windshield tours and stakeholder interviews. A tour curated by the Mayor's Office is followed by a community forum with NHPZ stakeholders including the Urban League, Health & Human Services, HUD, United Way, AmeriCorp interns, business, religious, cultural, environmental, school and public safety leaders, and persons sharing experiences of receiving care in the area. A statistician from the Health Disparities Institute supports the discussion in real-time with PolicyMap, such as showing medical debt by street.

Outcomes:
Students will inventory reasons for the life expectancy gap and be able to capture these challenges in future encounters using social determinants of health ICD coding (Z codes). Students will analyze suggestions from stakeholders on how physicians can address identified challenges, with a goal toward closing the life expectancy gap at their doorstep.

Innovation's strengths and limitations:
Early students will have familiarity with the community, and have considered stakeholders' opinions as to how to help. Conversational topics could be uncomfortable for some participants; a plan for debriefing is advised.

Feasibility and transferability for adoption:
Success depends on the sustained engagement of community leaders. Stakeholders were generous in lending their time and voice to training physicians. All are directly involved in the planning and direction of this module.

References:
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3. What is a Windshield Tour and what should I be looking as I complete mine in the NHPZ? Community Toolbox, Chapter 3, Section 21 – Windshield and Walking Surveys https://ctb.ku.edu/en/table-of-contents/assessment/assessing-community-needs-and-resources/windshield-walking-surveys/main (Credit: Community Tool Box, Kansas University; S. Fawcett, C. Holt, J. Shultz, P. Rabinowitz)
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Middle and High School Students as Standardized Patients: A Pediatric Standardized Patient Case for Pre-clerkship Students

Submission Type: Innovation Abstract
Accepted as: Oral Presentation
Region: SGEA

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Abstract Body:

Objective or purpose of innovation:
Medical students' first experience with pediatric history is in the clerkship years. We describe a session involving pre-clerkship students obtaining a history from a teenage standardized patient (SP) so the see the differences when eliciting a medical history in pediatric patients as compared to adult patients

Background and/or theoretical framework and importance to the field:
Medical students are taught clinical skills in their pre-clerkship phase and typically includes communication and physical exam on adult standardized patients (SP). This activity is different in that it uses actual pediatric SPs. We collaborated with medical academies in public schools in our county to have their students function as SP to experience the training provided in medical schools and to increase their interest in pursuing a career in medicine.

Design: Instructional methods and materials used:
A SP scenario was created of a caregiver/parent of an infant. Underrepresented students from middle and high schools were the SP performing the role of the parent. A checklist/benchmarks was utilized to include professionalism and communication skills to prepare the medical students. Pre-clerkship students received instructions and had 45 minutes to complete the interview with the SP inside the room. A faculty observed the interaction with the SP and provided formative feedback. After 45 minutes, all medical students attended a debrief of the activity.

Outcomes:
We had 80% of student completing an evaluation form and felt they had a better understanding of communication with pediatric patients. The middle and high school students gained an appreciation for the medical education system, and felt that the experience was valuable for them and the medical students.

Innovation's strengths and limitations:
This presents a way to expose pre-clerkship medical students to the pediatric history, while also engaging underrepresented minorities from middle and high school in the medical education process.

Feasibility and transferability for adoption:
This session could be used effectively at other institutions to improve diversity in the medical field, while also providing pre-clerkship students with pediatric experiences.

References:

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Learning in Leadership at Carolina- A Career Advancement and Leadership Program for Women Students

Submission Type: Innovation Abstract
Accepted as: Oral Presentation
Region: SGEA

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Abstract Body:

Objective or purpose of innovation:
We identified a gap in education of career-advancement and leadership skills in the curriculum. A needs assessment among self-identifying women students identified a perception that students feel their education has lacked formal career development skills. We created a 3-day program, LILAC, to address this gap in education.

Background and/or theoretical framework and importance to the field:
Social cognitive and social cognitive career theory (SCCT) were used as theoretical framework for the program. SCCT accounts for how experiences impact career choices.1,2 A review found that in most STEM domains, the self-efficacy beliefs of women were often lower than majority of their peers.3 Women-in-medicine programs have shown promise through improved recruitment, retention and creating a culture of inclusion.4,5

Design: Instructional methods and materials used:
The program included lectures on public speaking, time management, interview rounds, negotiation, mentorship, CV writing, networking, and student-doctor panels.

Outcomes:
Upon IRB approval, participants completed anonymous pre- and post-program surveys that were matched (n=29). We evaluated participants' change in confidence or comfort in career and leadership skills and efficacy of the program. Questions were graded on a scale of 0-100 of each quality. Many educational sessions showed significant improvements in participants' perceived ability. For example, participants increased 37.5 points in comfort negotiating ($p < 0.01$) and 27.7 points in knowing what questions to ask in an interview ($p < 0.01$). Participants positively evaluated the program, believed it would facilitate the next step in their career and felt supported as a woman in medicine.

Innovation's strengths and limitations:
Participants reported improvement in all skills taught. The ease of implementation and strong impact make this initiative worthwhile to implement. A limitation includes time, resources, and availability of students and faculty.

Feasibility and transferability for adoption:
This could be reproduced at any institution in which faculty are motivated to teach these sessions. Curriculum can be catered based on faculty expertise and student interest. Clinical students also requested a similar program for their level of education.

References:
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Developing a Course on Pandemic Medicine: An Example of Adaptive Expertise in Medical Education

Submission Type: Innovation Abstract
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Region: SGEA

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Abstract Body:

Objective or purpose of innovation:
During the COVID-19 pandemic, we created a virtual course on pandemic medicine for clerkship and post-clerkship students which was broadly applicable for students with diverse career goals.

Background and/or theoretical framework and importance to the field:
As the pandemic unfolded, many medical schools followed recommendations from the Association of American Medical Colleges to remove students from clinical learning environments. We rapidly engaged clerkship and post-clerkship students in a completely virtual, contextual learning environment while still ensuring progress toward graduation.

Design: Instructional methods and materials used:
Over a two-week period in March 2020, we developed a 4-week virtual course: "Pandemic Medicine Integrated Science Course," for 197 students that was delivered in April 2020. Students were divided into seven tracks to accommodate individualize learning interests: communication and information sharing, ethics, emerging therapeutics, global perspectives, health inequities, leadership, and public health. Case-based learning (CBL) groups were created with representation from each track to allow for application and peer teaching.

Outcomes:
All students (197/197) passed the course and 99% (195/197) completed end-of-course evaluations. Students' reactions to the course were favorable, with students most highly rating the course leadership and mix of learning activities. The mean (SD) overall rating for the course (1=very poor, 5=excellent) was 4.27 (0.80). Comments frequently recognized the unique stressors and compressed timeline required to design a large, virtual course.

Innovation's strengths and limitations:
Development of this course is an example of adaptive expertise in medical education as the course was developed during unprecedented circumstances in a time-compressed manner; a range of standard and innovative educational strategies had to be adapted to meet these demands.

Feasibility and transferability for adoption:
We plan to incorporate the course into the formal curriculum with modifications to the CBL cases and clinical experiences in the future. The overall approach to curriculum development and the course structure serves as a model for others and may be employed at any institution by adapting to local context and available expertise.

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Tuesdays are Great for Teaching Tips: A Spaced Education Strategy for Faculty Development

Submission Type: Innovation Abstract
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Region: SGEA

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Abstract Body:

Objective or purpose of innovation:
Faculty development (FD) programs to improve knowledge, skills, and behaviors of faculty as educators is required by ACGME for core faculty. Difficulty in meeting these requirements is consistently reported in the literature. COVID19 has increased the challenge, we sought to develop an innovative program via email utilizing spaced education as a strategy to reimagine delivering course content regarding evaluation and feedback.

Background and/or theoretical framework and importance to the field:
Our program utilized spaced education as the theoretical background. Spaced education suggests when information is presented and repeated in small intervals versus a bolus of information, knowledge, skills and behaviors are more easily retained and available for use. Due to limited time for FD, innovative programs that build on prior knowledge, are convenient and encourage practice are of great value.

Design: Instructional methods and materials used:
Our Tuesday's Teaching Tips (TTT) program was a CME approved 14-week course focused on evaluation and feedback. We developed a foundational micro-lecture and weekly emailed spaced-education statements adapted from the literature, using visuospatial triggers to assist with encoding and connection back to the micro-lecture. Faculty completed a course evaluation and reflective statement regarding perceived benefits.

Outcomes:
Thirty-one faculty across specialties completed the course. Evaluations revealed 98% rated the program Good-Excellent, 98% felt information gained would enhance patient care or medical education, 97% had moderate-high confidence in implementing changes in their teaching, and 100% wanted more TTT courses. The majority of comments were positive: "was wonderful," "great format," "taught great techniques," "great idea and a wonderful tool in the midst of COVID."

Innovation's strengths and limitations:
Faculty were very receptive to this teaching strategy designed to be easily accessible, eliminated "going to trainings," and used simple strategies to practice. Investigators are qualitatively evaluating comments from faculty and future direction should include assessment of behavioral impact on faculty skills and impact on learners.

Feasibility and transferability for adoption:
Tuesday's Teaching Tips has broad applicability across all specialties and institutions.

References:

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Compassionate Off-Ramp Programs: A Way to Leave Medical School with Another Degree

Submission Type: Innovation Abstract
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Region: SGEA

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Abstract Body:

Objective or purpose of innovation:
Some medical students encounter academic or personal difficulties which prevent them from progressing successfully . Others may decide midway through their education that they no longer want to pursue a medical career. In response, educators at some schools have created "compassionate off-ramp" programs, designed to help students leave medical school and pursue or obtain another degree, typically a Master's degree.

Background and/or theoretical framework and importance to the field:
These programs can help students both financially and emotionally, enabling them to leave their original program with a measure of self esteem, and enter an alternative path which may help them in their future careers.

Design: Instructional methods and materials used:
We performed an online search and identified 12 schools with off-ramp programs willing to participate in a structured 30 minute phone interview. We conducted interviews in 2019 and performed a content analysis on open ended responses to identify, clarify, and reach consensus.

Outcomes:
Degree requirements varied considerably. Most programs awarded a Master of Science in Medical Science or a similar degree. Some programs awarded a degree with no additional requirements; others required additional work or a capstone project. Students were offered access to the programs when they encountered difficulties; programs were not widely promoted.

Innovation's strengths and limitations:
Most respondents believed that their programs were helpful to both students and the institution. Students valued obtaining credit for effort already expended. Advantages included the opportunity to acknowledge students' work, increase career options, and reduce debt. The major challenge cited was the effort to initiate the program. No institution has conducted long term follow up.

Feasibility and transferability for adoption:
These programs are both feasible and transferable. While few institutions offer these programs, they appear to be a good strategy for helping students who were unable to or no longer desire to continue their medical education.

References:

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Establishing a Remote Clinical Skills Research Program

Submission Type: Innovation Abstract
Accepted as: Oral Presentation
Region: SGEA

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Abstract Body:

Objective or purpose of innovation:
We developed a remote, online clinical skills research program. Although the purpose was to accommodate our multiple clinical/academic campuses that impeded on-site research, this innovation was critical for adapting to pandemic physical distancing requirements.

Background and/or theoretical framework and importance to the field:
Recorded standardized patient assessments offer rich but often untapped insight into clinical skills development [1-2]. Observing trainees' clinical skills can engage coders with active learning processes that facilitate knowledge transfer [3], but video coding is also labor intensive—and student research contributions are typically limited by time [4].

Design: Instructional methods and materials used:
We recruited pre-medical students as research assistants to code videos of medical students completing standardized patient histories. All steps of the research process—mentoring, question development, data collection, analysis, and initial dissemination—were completed remotely through shared cloud-based documents, video conferences, data-collection sheet surveys, and simulation management software to access encounter recordings. Student coders also completed their own pre/post telehealth encounters to demonstrate whether they developed clinical skills through remote coding.

Outcomes:
The remote model allowed us to generate rich data, and we experienced no project interruptions from pandemic distancing requirements. Eleven students coded data remotely, with each completing an internal online research presentation. Student coders also gained clinical skills through the research experience and completed more thorough patient histories afterward (pre-history M=4.6 minutes, post-history M=17.0 minutes).

Innovation's strengths and limitations:
The innovation is limited by size. However, the program could be readily modeled by both research units and individuals. Remote medical education research facilitates student involvement while benefiting researchers' projects and student coders who gain clinical skills through the process.

Feasibility and transferability for adoption:
Because most academic medical centers record standardized patient encounters, clinical skills research through video coding is highly adaptable to a remote model. This presentation will focus on our lessons learned and demonstrate how participants can build a remote clinical skills research program using existing resources to increase the model's feasibility and transferability.

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1. Anderson MB, Stillman PL, Wang Y. Growing use of standardized patients in teaching and evaluation in medical education. Teaching and Learning in Medicine: An International Journal. 1994;6(1):15-22.

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Flipping the Script in a Family Medicine Clerkship: A New Model for Medical Knowledge Delivery

Submission Type: Innovation Abstract
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Region: SGEA

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Abstract Body:

Objective or purpose of innovation:
The purpose of this study was to determine if there were differences in knowledge gained when students completed the medical knowledge portion of the clerkship without clinical exposure (COVID cohort) compared to students who had standard clerkship instruction with medical knowledge and clinical exposure occurring simultaneously (pre-COVID cohort).

Background and/or theoretical framework and importance to the field:
With the COVID-19 disruption, our school delayed the start of third-year clerkships and shortened the Family Medicine clerkship length by 1 week. There was concern that this would make the simultaneous acquisition of medical knowledge and clinical skills challenging. We decided to have students complete the medical knowledge portion of the clerkship (40 Aquifer Family Medicine online cases) and take the Aquifer written summative examination assessing that knowledge prior to beginning clinical work.

Design: Instructional methods and materials used:
In the COVID cohort, 181 students were given 2 weeks to complete the cases and took the written exam at the end of the 2 weeks. In the pre-COVID cohort, 203 students were given 4 weeks to complete the cases and took the written exam on the last day of the clerkship. The mean score on exam was calculated for the COVID and pre-COVID cohorts and compared. A power calculation (alpha 0.05, power 0.8) to find a difference of 3 points in exam scores would require a sample size of 86 based on the mean and standard deviation.

Outcomes:
The mean score on the exam for the COVID cohort was 78, while the mean score for the pre-COVID cohort was 77. There was no significant difference in the mean score between the groups despite having adequate power to determine a difference.

Innovation's strengths and limitations:
This approach offers flexibility in the delivery of clinical medical knowledge. A limitation is the lack of follow-up data regarding long-term knowledge retention.

Feasibility and transferability for adoption:
This innovation could be implemented rapidly at institutions that use case-based learning for medical knowledge delivery.

References:
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2. Hayes JR, Johnston B, Lundh R. Building a Successful, Socially-Distanced Family Medicine Clerkship in the COVID Crisis. PRiMER. 2020;4:34. https://doi.org/10.22454/PRiMER.2020.755864
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Inclusive Health Education for Residents: Standardized Patient Encounters with Adults with Intellectual/Developmental Disabilities

Submission Type: Innovation Abstract
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Region: SGEA

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Abstract Body:

Objective or purpose of innovation:
The objective of this educational intervention was to provide Physical Medicine & Rehabilitation (PM&R) residents experience working with people with intellectual/developmental disabilities (PWIDD). We built capacity among community partners by training PWIDD to serve as standardized patients (SPs) at the University of Louisville School of Medicine.

Background and/or theoretical framework and importance to the field:
PWIDD are a priority population for reducing health disparities, as the population is at increased risk for poor health outcomes and[1-3]. One modifiable cause of the cumulative health disparities experienced by PWIDD[4] is lack of healthcare provider training [1-3,5,6]. Interventions to improve physicians' competency are needed, and such efforts should include PWIDD as experts on their lived experiences[1-3,7].

Design: Instructional methods and materials used:
SPs with IDD were recruited from Down Syndrome Louisville's (DSL) Actor Program and trained to portray patients with knee/shoulder pain. The encounters focused on communication and patient education. Residents were evaluated by a DSL staff member with a standardized clinical skills assessment, and by SPs with a modified assessment. SPs (n=4), DSL staff (n=2), and residents (n=6) participated in debrief focus groups.

Outcomes:
Participants were positive in their assessment of the experience. SPs reported on the verbal and nonverbal actions that produced positive encounters: "We did eye contact and…talking about my favorite cartoon…my family, my stupid pet, and my house." Residents agreed: "[S]he had a Hogwarts shirt on. I was joking with her about it during the encounter…so just finding common ground with your patient in any way." Participants reported that the act of writing down care instructions encouraged patient understanding.

Innovation's strengths and limitations:
The strength of this intervention is its meaningful application of inclusive health, by intentionally including PWIDD in a resident educational activity and by adapting assessment methods to be accessible to those with IDD. Limitations include small sample size.

Feasibility and transferability for adoption:
Strong relationships with community partners and individual self-advocates with IDD are vital for success at other institutions.

References:

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The development of a set of coaching competencies for medical education using a modified Delphi approach

Submission Type: Innovation Abstract
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Abstract Body:

Objective or purpose of innovation:
Coaching attempts to support academic, professional identity, and wellbeing goals in medical education (1, 2). Scant literature exists on assessing coaches and evaluating programs (3). Identifying the core competencies of a coach would begin to address this gap.

Background and/or theoretical framework and importance to the field:
The International Coaching Federation has published executive/leadership coaching competencies (4). The National Board of Health and Wellness Coaches and the National Board of Medical Examiners have developed coaching competencies for healthcare providers. Neither of these were specifically designed for medical education coaching. We describe the creation of a set of coaching competencies for medical education using a modified Delphi approach (5).

Design: Instructional methods and materials used:
The expert team was 7 experts in the field of coaching and/or assessment; 4 are certified coaches. A national Thematic Coaching Meeting occurred in October 2018, open to the AMA Accelerating Change in Medical Education Consortium schools. We also invited experts in coaching, adaptive learning, neuroscience, and medical education. Discussion, led by the study team and informed by our review of the literature, generated categories and individual competencies, using the ICF model as a starting point. Three rounds of consensus process followed by the expert panel in which domains and competencies were finalized.

Outcomes:
7 members participated in three Delphi rounds. 13 competencies in 4 domains resulted: 1. Coaching process and structure: establishing the coaching agreement, meeting management, managing process and accountability, coach self-monitoring. 2. Relational skills: establishing meaningful coaching relationships, emotional intelligence, adaptability, effective communication. 3. Coaching skills: fostering development of master adaptive learners, facilitating coachee wellbeing & professional fulfillment, Emphasizing co-creative collaboration. 4. Coaching theories and research: Identifying current coaching models and tools to support learning, flexibility.

Innovation's strengths and limitations:
These competencies share overlap with pre-existing competencies but reflect the unique learning environment and needs of medical learners.

Feasibility and transferability for adoption:
These competencies can inform learning objectives and coach assessment tools.

References:

1. Wolff M, Hammoud M, Santen S, Deiorio N, Fix M. Coaching in undergraduate medical education: a national survey. Med Educ Online. 2020 Dec;25(1):1699765. doi: 10.1080/10872981.2019.1699765. PMID: 31793843; PMCID: PMC6896497.
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Adding validity evidence to a coaching assessment tool

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Abstract Body:

Objective or purpose of innovation:
Medical education coaching evaluation suffers from few tools permitting program evaluation/coach feedback.

Background and/or theoretical framework and importance to the field:
We replicated an existing single-site instrument measuring coaching/the coaching relationship (1) to augment its validity evidence. Questions addressed the highest level of Miller's pyramid ("Does") (2).

Design: Instructional methods and materials used:
For content validity, all prompts were examined and deemed relevant by the curriculum assessment team. Two were edited for local use ("learning": "EPA"; "OHSU": "VCU") and emailed to all SOM students to assess their coach's performance in the 2019-2020 academic year.

1. I am able to accept any weaknesses or challenges my coach helps me understand.
2. I am able to work with my coach to select, organize, and interpret information I need to set goals.
3. I am able to work with my coach to set specific, measurable, achievable goals.
4. I trust my coach to help me navigate my EPA experiences.
5. I work with my coach to determine what my success at VCU SOM will look like.
6. My coach and I are responsible to each other.
7. My coach encourages me to develop my own learning objectives toward my professional development.
8. My coach helps me take a closer look at my thinking habits.
9. My coach stimulates me to take responsibility for my own learning process.
10. What kind of feedback would you like to receive from your coach at this time?
11. What would you like your coach to know about how things are going?

Outcomes:
460/806 instruments were returned (62%); 5 submitted blank/with fewer than 2 responses, representing 40/40 (100%) coaches. Full scale ranges were used.

Innovation's strengths and limitations:
Local contextualization was feasible and demonstrated psychometric strengths. Generalizability may be limited to programs that demonstrate a similarity in their framework for coaching.

Feasibility and transferability for adoption:
We add validity evidence for this tool, which suggests other programs could feasibly incorporate this tool also.

References:
1. Carney PA, Bonura EM, Kraakevik JA, Miller Juve A, Kahl LE, Deiorio NM. Measuring Coaching in Undergraduate Medical Education: the Development and Psychometric Validation of New Instruments. Journal of general internal medicine, 2019. 34(5), 677-683.
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Applying Coactivity Scales to EPA Assessments of Clerkship Students

Submission Type: Innovation Abstract
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Abstract Body:

Objective or purpose of innovation:
The purpose of this study was to evaluate the feasibility of applying coactivity scales to EPA-based assessments by comparing (1) the ratings of students performing EPAs with increasing levels of difficulty, and (2) the ratings of cohorts of students performing the same EPAs over time.

Background and/or theoretical framework and importance to the field:
Clinical clerkships provide critical opportunities to evaluate medical student performance on core Entrustable Professional Activities (EPAs). However, there is no standardized method for assigning entrustability. The AAMC proposes the use of the Modified Ottawa coactivity scale to anchor entrustability assessments.

Design: Instructional methods and materials used:
We adapted a modified PRIME scale (professionalism, reporter, interpreter, and manager) to assign a developmental hierarchy to the EPAs. To assess student skills in selected EPAs, we used the Modified Ottawa coactivity scale, and assigned a value of 1-4 in order of increasing entrustability to anchors in the scale. We calculated and compared mean ratings of EPAs over time using IBM SPSS Statistics (v25) for descriptive analyses, ANOVA, and general linear models.

Outcomes:
A total of 2623 evaluations (Cronbach's alpha of 0.927), were completed for 247 medical students, and showed a significant increase over time for Professionalism (p=0.011), Reporter (p=0.007), Interpreter (p=0.004) and Manager (p=0.007). EPAs with increasing intellectual demand were associated with lower student EPA ratings.: 3.51 (+/-0.50) for Professionalism, 3.45 (+/-0.47) for Reporter, 3.35 (+/-0.59) for Interpreter, and 3.28 (+/-0.60) for Manager.

Innovation's strengths and limitations:
The University of Miami EPA assessment tool provides a useful measure of student readiness for patient care. Raters entrusted students more with skills of professionalism, reporting, and interpreting than with managing, a more sophisticated skill. In every domain, entrustability increased with clinical experience. A limitation of this study is that the tool was used at a single institution.

Feasibility and transferability for adoption:
The tool can potentially be deployed across multiple clerkships at other medical schools as an effective and practical tool for medical student evaluation.

References:

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Medical Student to Medical Doctor: Refinement of a Two-Week Transition to Residency Course

Submission Type: Innovation Abstract
Accepted as: Oral Presentation
Region: SGEA

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Abstract Body:

Objective or purpose of innovation:
To develop a transitions-to-residency course that meets the evolving needs of both graduating medical students and graduate medical education (GME).

Background and/or theoretical framework and importance to the field:
Transition to internship courses have become integral components to bridge the gap between undergraduate medical education (UME) and GME. As requirements for GME evolve, so must curriculum for transition courses.

Design: Instructional methods and materials used:
The Advanced Physician Experience (APEX) is a 10-day mandatory preparatory course for fourth-year medical students at Baylor College of Medicine. The curriculum uses multiple teaching modalities and involves both UME and GME educators. The course utilizes a continuous quality improvement (CQI) process to ensure the delivery of relevant content and optimize preparedness for residency. Between 2017-2019, 521 medical students enrolled in APEX. Course evaluations provided outcomes data for course objectives.

Outcomes:
Group comparison data (based on 92% response rate) by year revealed that almost all of the course evaluation items significantly improved in 2018 and 2019 in comparison to 2017. APEX was rated to have clear learning objectives in 2018 and 2019 in comparison to 2017, $H(2)=51.30, p<.001, \eta 2=0.10$. Faculty were also perceived to provide more effective teaching in 2018 and 2019 in comparison to 2017, $H(2)=45.67, p<.001, \eta 2=0.09$.

Feedback led to 1) less emphasis on procedures and a focus on acquisition of ultrasound skills for all students 2) integration of Common Overnight scenarios that test clinical reasoning into ob-gyn and surgery and 3) an expansion of a Teach-the-Teacher curriculum for all students.

Innovation's strengths and limitations:
Our innovation's strength is through a robust CQI approach to provide the most relevant curriculum for students that can meet the needs of GME. Limitations include the inability to evaluate prospectively the impact of the curriculum on these students.

Feasibility and transferability for adoption:
Both course content and the CQI approach are transferable to other schools.

References:

1. Teo AR, Harleman E, O'Sullivan P S, Maa J. The key role of a transition course in preparing medical students for internship. Academic medicine : journal of the Association of American Medical Colleges. 2011;86(7):860-865.

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Use of a Standardized Patient Encounter to Assess Shared-Decision Making Communication Skills in Third-Year Medical Students

Submission Type: Innovation Abstract
Accepted as: Oral Presentation
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Abstract Body:

Objective or purpose of innovation:
The purpose is to provide post-clerkship medical students authentic practice and feedback on shared-decision making (SDM) using a standardized patient (SP) encounter. Students 1) explain health concepts and check for understanding using teach-back technique, and 2) facilitate a SDM conversation including multiple management choices.

Background and/or theoretical framework and importance to the field:
Shared-decision making (SDM) is a patient-centered communication skill involving collaboratively developing a treatment plan based on patient values/preferences. SDM is based on theories of self-determination and relational autonomy and is increasingly being implemented in undergraduate medical education curricula to promote patient autonomy and inclusion.

Design: Instructional methods and materials used:
We designed an SP case for assessing post-clerkship medical students' SDM skills. Following a didactic, students completed the 25-minute SP encounter: an ambulatory visit for sinusitis. Student door notes included the diagnosis and evidence-based treatment options. Following the encounter, students, faculty observers, and SPs completed rating scales for SDM skills and perceived empathy, followed by small group debrief with faculty.

Outcomes:
We analyzed student performance data between 2016-2018 (n=121). Using a 30-point scale, students rated their overall SDM skills lower than SPs ($p=0.03$). Students rated their empathy (10-point scale) 7% higher compared to SPs ($p< 0.001$). 12% of student-SP dyads disagreed about which treatment choice was mutually decided. During debrief, students compared self-assessment and SP scores, reflecting on discrepancies. They enjoyed the case despite how unexpectedly challenging it was. This case highlights the difficulty of mastering SDM and the value of direct observation and patient feedback.

Innovation's strengths and limitations:
This intervention is simple and time-efficient, and supports learning using simulation and multi-source feedback. Use of validated composite rating scales allows effective comparison between groups. Interpretation of results is limited by lack of a control group or serial measurements.

Feasibility and transferability for adoption:
The case is easily implemented without technical needs and minimal training. Although designed for a simulation center, the case simplicity permits adaptation to virtual learning.

References:

1. Makoul G, Clayman ML. An integrative model of shared decision making in medical encounters. Patient Educ Couns. 2006;60(3):301-312.

2. Gravel K, Légaré F, Graham ID. Barriers and facilitators to implementing shared decision-making in clinical practice: a systematic review of health professionals' perceptions. Implement Sci. 2006;1(1):16.
3. Towle A, Godolphin W, Greenhalgh T, Gambrill J. Framework for teaching and learning informed shared decision making Commentary: Competencies for informed shared decision making Commentary: Proposals based on too many assumptions. Bmj. 1999;319(7212):766.
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From an at-risk student program to an inclusive MS1 program: An extension of student-led, question-based, small group learning

Submission Type: Innovation Abstract
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Region: SGEA

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Abstract Body:

Objective or purpose of innovation:
As an extension of a pre-matriculation program for at-risk and rural pipeline students, weekly, peer-facilitated, question-based groups were developed to support this cohort through the Fundamentals of Medicine and the first two organ system courses. We recently expanded the program to include all first-year (MS1) students as proof of concept for an inclusive peer-led program that supports an academic and social transition into medical education.

Background and/or theoretical framework and importance to the field:
Students begin medical school with diverse educational backgrounds and experiences. Passive learning behaviors and challenges integrating large amounts of material can contribute to academic difficulty. Problem-based learning, practice questions, peer-designed and led learning sessions, and a welcoming and supportive learning environment can lead to improved academic performance. Importantly, students with low MCAT scores appear to benefit most from question-based practice.

Design: Instructional methods and materials used:
We created a voluntary, question-based program for all MS1 students. The same small groups of 6-8 students met weekly with a designated peer facilitator. Each week, two lead peer tutors developed original, board-style multiple-choice questions and answer explanations aligned with course content. The standardized question sets were used by each group facilitator.

Outcomes:
83% of MS1s initially participated, forming 21 groups. After 3 months, 78% continued to regularly participate. A Likert scale survey distributed two months into the program received a 45% response rate (n=91). Respondents felt the sessions:

- Improved their understanding of course content (80/84 or 95.25%)
- Decreased exam anxiety (77/83 or 92.77%)
- Positively impacted exam scores (63/83 or 75.90%)
- Fostered a positive learning community (81/83 or 97.59%)

Innovation's strengths and limitations:
Small groups appear to be valuable, supportive environments that promote learning and social engagement. Data collection is ongoing. Limitations include self-reported data and an inability to draw conclusions until the end of the courses. Pandemic related distance-learning may have impacted participation and perception.

Feasibility and transferability for adoption:
Motivated volunteer or paid peer educators are crucial to feasibility.

References:
1. Alcamo, A. M., Davids, A. R., Way, D. P., Lynn, D. J., & Vandre, D. D. (2010). The impact of a peer-designed and-led USMLE Step 1 review course: improvement in preparation and scores. Academic Medicine, 85(10), S45-S48.
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Distributive Immersive Virtual Reality to Explore Aging as a member of the LGBTQ Community

Submission Type: Innovation Abstract
Accepted as: Oral Presentation
Region: SGEA

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Abstract Body:

Objective or purpose of innovation:
Determine the feasibility, acceptability, and impact of distributed virtual reality to embody LTBTQ members challenged with caring for their aging partners, finding housing, family dynamics and navigating healthcare.

Background and/or theoretical framework and importance to the field:
Sexual and gender minority patients experience poorer overall health due in part to discrimination, homophobia, identity concealment, and a lack of provider training on their unique health needs1. Minimal curriculum time and lack of training has contributed to patient discrimination and incompetence among healthcare providers.

Design: Instructional methods and materials used:
The Eden Lab by Embodied Labs was piloted for the Alliance group comprised of LGTBQ students and allies to determine its utility for the medical curriculum. An instructor donned virtual reality goggles and shared the screen permitting students to virtually "embody" these characters. Pause points were created to ask questions, share reflections, and gather feedback on impressions, reactions, and recommendations.

Outcomes:
Students found the module to be an accurate introduction to the challenges that LGTQ members face, a good representation of positive and negative physician behavior, and a valuable educational experience. Members highly recommended including this into the curriculum and provided thoughtful suggestions for its incorporation. Overall, the module provided a short but impactful distance education experience to engage students in conversation and education about caring for LGTBQ patients.

Innovation's strengths and limitations:
The distributive mode allowed for multiple individuals to benefit with only one set of goggles. The virtual platform allowed for a high level of engagement through chat and video. While the software is costly, it includes several 6 total labs of other topics. Technology requirements of goggles, gaming computer and strong internet connections are potential barriers.

Feasibility and transferability for adoption:
Given the adaptation to distance learning because of Covid-19, distributed virtual reality may be an effective means to deliver first-person perspectives that educate trainees and generate empathy about the unique needs of LGBTQ members.

References:

Streed, C.G., Hedian, H.F., Bertram, A. et al. Assessment of Internal Medicine Resident Preparedness to Care for Lesbian, Gay, Bisexual, Transgender, and Queer/Questioning Patients. J GEN INTERN MED 34, 893–898 (2019). https://doi.org/10.1007/s11606-019-04855-5

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Use of Mini PBL Sessions in the Medical School Interview

Submission Type: Innovation Abstract
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Region: SGEA

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Abstract Body:

Objective or purpose of innovation:
Medical school interviews focus on the ability to engage in a one-on-one conversation. Even modern techniques, like the Multiple Mini Interviews (MMIs) are based on closed conversational environments. The use of a Problem Based Learning (PBL) activity may serve as an indicator of a candidate's success in PBL driven curriculum.

Background and/or theoretical framework and importance to the field:
PBL helps an institution dynamically assess the ability of an interviewee to interact with peers. This allows the admissions committee to observe the interpersonal and professional skills of each candidate. This method provides candidates with an opportunity to determine whether they will be satisfied in a PBL driven curriculum.

Design: Instructional methods and materials used:
Candidates are invited to participate in the PBL session by the Dr. Kiran C. Patel College of Allopathic Medicine (NSUMD) admissions committee. Following the session, candidates were emailed a link to an anonymous and voluntary survey. Candidates are gauged on interest and engagement in the PBL interview session and likeliness to attend a medical school with a PBL curriculum.

Outcomes:
58% of participants had never participated in a PBL session prior to the session, 97% of respondents felt interested and engaged during the session, 97% reported learning something new, 100% felt comfortable sharing knowledge with their peers, 80% reported preferring PBL over traditional interview format, 60% of participants felt the session provided them with an opportunity to demonstrate themselves to NSUMD admissions. 93% of participants preferred attending a medical school with PBL.

Innovation's strengths and limitations:
Preliminary results show candidates find the PBL interview session interesting, engaging and prefer attending a medical school with a PBL curriculum. Future investigations will survey matriculating students on their views of the PBL interview and survey admission committee faculty on the utility of this data.

Feasibility and transferability for adoption:
We propose this strategy is easy to adopt into any medical school interview process and would help enrich the admissions screening process.

References:

1. Donner RS, Bickley H. Problem-based learning in American medical education: an overview. Bull Med Libr Assoc. 1993;81(3):294-298.
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Improving Diversity in Alpha Omega Alpha Medical Honor Society Selection

Submission Type: Innovation Abstract
Accepted as: Oral Presentation
Region: SGEA

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Abstract Body:

Objective or purpose of innovation:
Increase diversity of student AOA membership to reflect student body diversity.

Background and/or theoretical framework and importance to the field:
Attention to racial disparities in medical education recently increased dramatically.1,2 Lack of diversity in AOA chapters is one problem leading a few schools to suspend their AOA chapters.3-5 UFCOM holistic admissions led to a 5-year average of 23% URM matriculants. Only 2% (15/654) of students inducted into AOA in the last 5 years self-identified as URM. This was despite not using USMLE scores and blinding the selection process which relied solely on evidence of leadership, service, unique accomplishments (e.g. research, awards), and professionalism. Top quartile 3rd year GPA determined eligibility; this was the bottleneck as few URM students met this criteria.

Design: Instructional methods and materials used:
In 2018, a student task force of AOA & non-AOA medical students and the AOA Councilor proposed changes to expand eligibility. Students in the 2nd GPA quartile would be eligible if they met one of the following criteria: top 25% peer evaluation, nomination by their learning community leader, or top quartile performance on the summative Clinical Skills Exam (CSE). Implementation in 2020 did not include CSE data due to pandemic-related adjustments to the exam.

Outcomes:
Six students met alternate pathway criteria, four of whom were URM. All 6 were selected in the blinded election process. Overall 19% (5/26) of new members were URM.

Innovation's strengths and limitations:
All students identified through the alternate pathway were selected suggesting we identified top students that GPA alone did not capture. This is only one year of data .

Feasibility and transferability for adoption:
We used a published, validated peer review tool. Most schools have learning communities or other key faculty who could nominate students.6

References:
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2. Lucey CR, Hauer KE, Boatwright D, Fernandez A. Medical education's wicked problem: Achieving equity in assessment for medical learners (2020) Acad Med; 95:S98-S108.
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Catalyzing Culture Change through a Comprehensive Social Justice Curriculum Task Force

Submission Type: Innovation Abstract
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Region: SGEA

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Abstract Body:

Objective or purpose of innovation:
UNC-Chapel Hill School of Medicine (UNC SOM) aimed to transform medical education and promote social justice with an emphasis on anti-racism by: 1) integrating social justice into all curricula, 2) creating a socially just learning environment, and 3) incentivizing faculty development.

Background and/or theoretical framework and importance to the field:
Understanding the social dynamics influencing medicine is vital to physicians' efficacy. UNC SOM has a longitudinal Social and Health Systems seminar delivered separately from the biomedical and clinical sciences; this leads to relative devaluing of content compared to that on standardized tests.

Design: Instructional methods and materials used:
The Vice Dean of Academic Affairs charged a task force of 21 faculty, staff, and students to develop goals, metrics, and recommendations for integrating social justice into the SOM in July 2020. Workgroups met monthly while leadership met twice per month. A mixed methods approach will assess effectiveness, through interviews of SOM leadership and tracking of implementation.

Outcomes:
The task force developed 42 total recommendations and presented them to SOM leadership in November 2020. Recommendations in curricular innovation included: 1) removing biased content, 2) developing a relationship-based curriculum, 3) modifying student assessment types, 4) creating an advocacy curriculum, and 5) holding faculty accountable to social justice principles. Recommendations to develop a socially just learning environment included: 1) analyzing the hidden curriculum, 2) embedding inclusive counselors, 3) training residents, and 4) considering admissions processes. Recommendations in faculty development regarded 1) faculty expectations, 2) incentives, and 3) recruitment and support of underrepresented faculty. Over the coming months we will be able to report on successes, pitfalls, and influencing factors.

Innovation's strengths and limitations:
The task force efficiently made meaningful and comprehensive recommendations by establishing concrete goals and timeline, and including key decision-makers and content experts. Some recommendations are already underway, and implementation evaluation is ongoing.

Feasibility and transferability for adoption:

A task force can successfully create comprehensive recommendations to promote social justice culture change.

References:

1. Social Justice and Health. American Public Health Association. https://apha.org/what-is-public-health/generation-public-health/our-work/social-justice. Published 2020. Accessed December 13, 2020.
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Creating and implementing a comprehensive and culturally competent medical Spanish curriculum

Submission Type: Innovation Abstract
Accepted as: Oral Presentation
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Abstract Body:

Objective or purpose of innovation:
The objective of our customized medical Spanish curriculum is to increase the cultural competency and confidence of medical students in caring for low English proficiency patients during their clinical years.

Background and/or theoretical framework and importance to the field:
Spanish is the second most common language spoken in the US., however, there is a lack of medical curriculum dedicated to the care of this population. Further, the educational material available often focuses on Hispanic demographics in a ubiquitous manner not considering regional dialects and cultural idiosyncrasies. We developed both dialect and culturally specific sessions based on the predominant demographics in the Broward county area. Teaching methods of spaced repetition and active recall were incorporated to facilitate learning of Medical Spanish terminology for students with a varying range of Spanish fluency.

Design: Instructional methods and materials used:
The elective consists of sessions with community physicians who lead discussions on community health needs of key Hispanic demographics. These sessions are paired with asynchronous activities incorporating the use of spaced repetition and active retrieval to familiarize students with medical and regionally specific terminology and cultural considerations. Students then engage in a standardized patient (SP) experience using culturally diverse scenarios. Pre and post course surveys are administered to assess for satisfaction and confidence.

Outcomes:
Post-course survey showed that 75% of attendees reported increased confidence in vocabulary, interviewing skills, and recognition of cultural contextual differences in patient care.

Innovation's strengths and limitations:
This curriculum is applicable to students with varying degrees of Spanish fluency and focuses on cultural awareness. Limitations include a small number of enrolled students given that this is a first-time elective and a lack of long-term outcomes during the students' clerkship years.

Feasibility and transferability for adoption:
Our study shows a practical and easy to adopt way to customize a Medical Spanish course that is scalable based on the fluency of the medical student and incorporates use of Standardized Patients which are widely available to medical schools.

References:

1. Colby SL, Ortman JM. Projections of the size and composition of the U.S: 2014-2060. US Census Bureau. https://www.census.gov/library/publications/2015/demo/p25-1143.html. Published 2019. Updated 2019-07-02T09:48:47.261-04:00. Accessed.

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Opening a New Medical School in a Pandemic: Teaching Anatomy in the Time of COVID-19

Submission Type: Innovation Abstract
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Region: SGEA

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Abstract Body:

Objective or purpose of innovation:
UHCOM welcomed its inaugural class of medical students in August 2020. Overcoming the challenges of opening a new medical school during a global pandemic required flexibility and creativity. We will cover the specific strategies, collaborations and technology that allowed us to successfully deliver Anatomy.

Background and/or theoretical framework and importance to the field:
The widespread need to adapt and deliver medical education during a pandemic is a unified external pressure faced by all US medical schools. As a new medical school delivering the first course to our inaugural class, UHCOM had no previous institutional experience to draw upon to adapt or change as a result of this new pressure. We leveraged a start-up spirit allowing us to address these issues with a small and nimble team.

Design: Instructional methods and materials used:
We will highlight how through the use of technology and a culture of collaboration, we successfully delivered an anatomy course and lab to our inaugural class of medical students.

Outcomes:
Despite the challenges of opening a new medical school during a global pandemic, our team's collaborative partnership and commitment lead to flexible solutions that provided students with face to face and virtual access to the UHCOM Human Anatomy lab that were in compliance with our COVID-19 contingency plan. Student outcomes, including the summaries of course and faculty evaluations with be presented during the session.

Innovation's strengths and limitations:
Strengths include leveraging technology to provide a safe and robust hybrid learning environment and the applicability of best practices that frame organizational collaboration. Limitations include the timing and degree to which technology are available and the internal and external pressures that drive organizational change.

Feasibility and transferability for adoption:
With the widespread use of conferencing platforms (Zoom, MS Teams, etc.) to facilitate undergraduate medical education to accommodate COVID-19 contingency planning and the importance of anatomy instruction to the pre-clinical curriculum, this presentation is widely applicable to US medical schools.

References:

1. Singal, A., Bansal, A., Chaudhary, P., Singh, H., & Patra, A. (2020). Anatomy education of medical and dental students during COVID-19 pandemic: a reality check. Surgical and radiologic anatomy : SRA, 1–7. Advance online publication. https://doi.org/10.1007/s00276-020-02615-3

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Peer to peer learning in medical education: an evaluation of a student-led, online COVID-19 course

Submission Type: Innovation Abstract
Accepted as: Oral Presentation
Region: SGEA

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Abstract Body:

Objective or purpose of innovation:
The COVID-19 pandemic stressed the educational structure of healthcare and created a need for health professionals in all levels of training to adapt. We evaluated the effectiveness of addressing preclinical students' need for knowledge on a specific topic (i.e., COVID-19) through the use of a virtual student-driven course.

Background and/or theoretical framework and importance to the field:
Absent a formal, pandemic-centered learning opportunity for preclinical students at the University of North Carolina School of Medicine, seventeen clinical students developed an optional 8-week course for preclinical students. Studies have demonstrated the benefits of peer teaching for both teacher and learner.1,2

Design: Instructional methods and materials used:
Clinical students created an online, student-run curriculum to provide knowledge on COVID-19, foster community, and promote public health crisis preparedness. For course evaluation, pre- and post-course surveys were developed for instructors and students. Students created a final presentation at the end of the course.

Outcomes:
Of 188 students in the preclinical cohort, 143 enrolled and 130 completed all course requirements. Students reported increased confidence toward knowledge on all course topics, peer teaching, learning in an online format, and overall preparedness with regards to a public health crisis. The five highest-ranked content topics included clinical presentation and treatment, health policy, epidemiology, ethics, and basic science connection. Overall, 79.2% of student participants and instructors were satisfied with the experience.

Innovation's strengths and limitations:
As medical education evolves, with increasing emphasis on small-group and virtual learning experiences, student-driven online curricula provide effective teaching models. Peer-to-peer teaching meets ongoing education needs. Time and availability of clinical students and learners to incorporate this into a time restricted curriculum is a limitation.

Feasibility and transferability for adoption:
This course could be incorporated into any curriculum in which students are motivated to provide

instruction to their peers and in which others are eager to learn. The virtual model with current events and topical teaching was effective and met with positive regard at our program.

References:
1. Buckley S, Zamora J. Effects of participation in a cross-year peer tutoring programme in clinical examination skills on volunteer tutors' skills and attitudes towards teachers and teaching. BMC Med Educ 2007; 7: 20.
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Competency Based Graduation: Improving Patient Care and Increasing Local Workforce

Submission Type: Innovation Abstract
Accepted as: Oral Presentation
Region: SGEA

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Abstract Body:

Objective or purpose of innovation:
At the Virginia Commonwealth University School of Medicine (VCU-SOM) we developed and piloted an accelerated and competency-based graduation (CBG) program that focuses on competency, rather than time, as the standard for graduation.

Background and/or theoretical framework and importance to the field:
In the last decade, there has been renewed interest in three-year MD pathway programs. While these programs help address concerns over debt, they have not addressed rigorous Competency Based Medical Education (CBME) training.

Design: Instructional methods and materials used:
The CBG program at VCU-SOM developed in 2018 is open to all VCU medical students interested in variety of specialties. Students apply for participation at the end of their preclerkship years. Selection is determined by performance and mutual interest between the student and the respective residency training program. Students enter the program at the start of their clinical phase. Students complete the same core clerkships required of all students and an acting internship in their chosen specialty in lieu of an elective month. They are assessed for adequate progress over the course of the clinical year by the Clinical Competency Committee.

Outcomes:
In the first pilot year 9 students entering the program but due to assessment rigors and student choice ultimately 5 students continued onto the match. Prior to the match deadline, all five students were assessed to be competent to graduate and matched into their chosen residency at VCU . They started their internships in July of 2020. To date, all program directors report the graduates are meeting expected milestones and have assimilated into residency well. It is estimated that students saved approximately $35,000 if in state and $55,000 if out of state in tuition.

Innovation's strengths and limitations:
We did identified challenges and limitations in the first cohort including relative lack of data available for several Core EPAs assessed.

Feasibility and transferability for adoption:
The CBG program provides a model for competency-based graduate for medical students while simultaneously lowering the cost of tuition.

References:
1. Cangiarella J, Fancher T, Jones B, et al. Three-Year MD Programs: Perspectives from the Consortium of Accelerated Medical Pathway Programs (CAMPP). Acad Med. 2017;92:483-490.
2. Carraccio C, Englander R, Van Melle E, et al. Advancing Competency-Based Medical Education: A Charter for Clinician-Educators. Acad Med. 2016;91:645-649.
3. Englander R, Flynn T, Call S, Carraccio C, et al. Toward Defining the Foundation of the MD Degree: Core Entrustable Professional Activities for Entering Residency. Acad Med. 2016; 91:1352-1358.
4. Sozener CB, Lypson ML, House JB, Hopson LR, Dooley-Hash SL, Hauff S, Eddy M, Fischer JP, Santen SA Reporting Achievement of Medical Student Milestones to Residency Program Directors: An Educational Handover. Acad Med. 2016;91:676-84.

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Innovative Race in Medicine Lecture Series Directly Address Gaps in Health Disparities Medical Education

Submission Type: Innovation Abstract
Accepted as: Oral Presentation
Region: SGEA

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Abstract Body:

Objective or purpose of innovation:
COVID related health disparities, recent national instances of racial injustice, and students' calls for action led to the formation of the Justice Thread Team (JTT) at our institution. The JTT has been charged with making amendments to the curriculum to better prepare students to serve communities facing disproportionate morbidity and mortality. Thus, a Race in Medicine Lecture Series was created to address this curriculum gap.

Background and/or theoretical framework and importance to the field:
LCME mandates the inclusion of health disparities curriculum. With many students focused on retaining information pertinent to board exams, it can be hard to include meaningful discussions on race and medicine. This may lead to oversimplification of race in current curricula and lack of critical thinking regarding health disparities.

Design: Instructional methods and materials used:
The lectures were embedded in the pre-clinical curriculum to align with the subject matter being taught. Thus far, three faculty of color from across the nation with content expertise were invited to share knowledge pertaining to the intersection of race and health. Lectures were mandatory and material made testable by course directors. The lectures were delivered virtually in accordance with COVID restrictions.

Outcomes:
This lecture series addresses gaps in medical education including the role that race plays in the practice of medicine and health. The mandatory nature of the lecture series is key to ensuring this important information is disseminated to all students.

Innovation's strengths and limitations:
By selecting faculty of color to deliver the lectures, we intentionally expose students to diverse faculty and this may also serve as a recruitment tool. Each guest lecturer was provided with an honorarium to show appreciation and to address the significant minority tax burden that faculty of color often face in academic medicine. Future lectures will include post evaluations.

Feasibility and transferability for adoption:
The lecture series is an innovative, cost-efficient, and transferable strategy for addressing unmet needs in health disparities' education.

References:
1. 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
2.Rodríguez JE, Campbell KM, Pololi LH. Addressing disparities in academic medicine: what of the minority tax?. BMC Med Educ. 2015;15:6. Published 2015 Feb 1. doi:10.1186/s12909-015-0290-9

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Red light or green light: Preparing medical students to recognize mistreatment through a virtual, interactive case-based workshop

Submission Type: Innovation Abstract
Accepted as: Oral Presentation
Region: SGEA

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Abstract Body:

Objective or purpose of innovation:
The COVID-19 pandemic required thoughtful and innovative alteration of pre-clerkship curricula as students prepared to begin clerkship rotations in the midst of a pandemic and during a nationwide anti-racism call to action.

Background and/or theoretical framework and importance to the field:
During clerkship orientation, all medical students attend a case-based Student Mistreatment workshop. It has traditionally been conducted in person, but due to the pandemic, the session was run virtually in 2020. Students were given the opportunity to interactively annotate slides to graphically reflect their reactions and perceptions to a variety of cases related to student harassment, discrimination, and disrespectful behavior. The goal of the session was to prepare students to respond and report situations involving bias, microaggressions, or other inappropriate behaviors should they occur during their upcoming clinical rotations.

Design: Instructional methods and materials used:
The workshop was run by faculty live for the entire class of rising third year medical students on WebEx using the annotations tool and chat function. Students were given access to annotate slides that demonstrated a sliding scale from green to red demonstrating their discomfort with certain behaviors, situations, or experiences and then discussed through the chat feature how they would respond, address, and report the circumstances if warranted.

Outcomes:
85% of students agreed or strongly agreed that they could define student mistreatment and would know how to report it after participating in the workshop. Informal verbal feedback supported that the workshop format was well received and provided a safe and engaging platform fordiscussion despite the challenges of being virtual.

Innovation's strengths and limitations:
Increasing attention needs to be paid to providing impactful and practical sessions for students to identify student mistreatment and discrimination and to prepare them for the challenges they may face when entering clinical settings for the first time.

Feasibility and transferability for adoption:
Virtual, interactive case-based workshops are an easily implementable approach to prepare students for potential mistreatment in their clerkships.

References:

1. Hill KA, Samuels EA, Gross CP, et al. Assessment of the Prevalence of Medical Student Mistreatment by Sex, Race/Ethnicity, and Sexual Orientation. JAMA Intern Med. 2020;180(5):653–665. doi:10.1001/jamainternmed.2020.0030

2. Loden M. 1995. Implementing Diversity: Best Practices for Making Diversity Work in Your Organization. New York: McGraw-Hill.
3. Brandford E, Hasty B, Bruce JS, Bereknyei Merrell S, Shipper ES, Lin DT, Lau JN. Underlying mechanisms of mistreatment in the surgical learning environment: A thematic analysis of medical student perceptions. Am J Surg. 2018 Feb;215(2):227-232. doi: 10.1016/j.amjsurg.2017.10.042. Epub 2017 Nov 7. PMID: 29167023.
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Creation of Justice Thread Team: Health Disparities Education Reimagined

Submission Type: Innovation Abstract
Accepted as: Oral Presentation
Region: SGEA

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Abstract Body:

Objective or purpose of innovation:
COVID related health disparities, recent atrocities involving racial injustice, and students' calls for action led to the formation of the Justice Thread Team (JTT) at our institution. An evolving vision for the work of the Justice Thread encompasses domains including equity, advocacy, law and policy, and honor.

Background and/or theoretical framework and importance to the field:
Justice is a core tenet of bioethics, enshrined at center of a physician's professional identity and mission. Students must acquire the knowledge and skills to understand and recognize injustice and act to defend the health of patients and communities. Despite nationwide efforts to concentrate on preventative health and eliminate health disparities, a common challenge for medical educators is how to facilitate nuanced and complex discussions around subjects such as the intersection of race/ethnicity with medicine that provides students with appropriate depth and understanding and moves them to action.

Design: Instructional methods and materials used:
The JTT is comprised of a faculty director and five medical students from diverse backgrounds. The JTT collaborates with preclinical curriculum course directors to better address how race/ethnicity, sexual orientation, religion, social injustice, and racial injustice impact the delivery of healthcare.

Outcomes:
Thus far, The JTT has (1) developed a race in medicine lecture series; (2) modified the health disparities and social determinants of health standardized patient simulation; and (3) served in a consulting capacity for course directors who would like to provide a deeper, critical analysis around the existence of health disparities.

Innovation's strengths and limitations:
The JTT was developed with institutional leadership funding and support (protected time for Justice Thread director and honoraria for guest lecturers), demonstrating their commitment to impacting change. Next steps will include developing formal evaluation methods for lecture series.

Feasibility and transferability for adoption:
The JTT is an innovative, student-driven strategy for addressing unmet needs in health disparities' education during the pre-clinical years.

References:
1. 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
2. Bi S, Vela MB, Nathan AG, et al. Teaching Intersectionality of Sexual Orientation, Gender Identity, and Race/Ethnicity in a Health Disparities Course. MedEdPORTAL. 2020;16:10970. Published 2020 Jul 31. doi:10.15766/mep_2374-8265.10970

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Developing New Competencies in Health Equity Across the Continuum at Dell Medical School (DMS) at the University of Texas at Austin

Submission Type: Innovation Abstract
Accepted as: Oral Presentation
Region: SGEA

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Abstract Body:

Objective or purpose of innovation:
In 2019 the associate dean for health equity engaged institutional and community members in strategic planning with the goal of embedding health equity as an operating principle in all areas of DMS. We formed a Health Equity Medical Education Workgroup to integrate health equity into medical education.

Background and/or theoretical framework and importance to the field:
In the face of national calls for racial and societal equity, structural competency quickly emerged in early meetings as the theoretical framework for this effort. Physicians need to understand the structural forces that contribute to disparate health outcomes and know how to recognize and intervene to reduce inequities at the personal, policy, and system levels.

Design: Instructional methods and materials used:
The workgroup, convened to be diverse and inclusive of specialty, gender, ethnicity and continuum, quickly decided that Health Equity should be a separate domain. Meeting bi-weekly, members reviewed the literature and defined the competencies. Members helped vet the results with faculty, resident, and student reactor panels.

Outcomes:
The resulting Health Equity domain consists of four competencies, each with enabling objectives: historical and current context, personal and interpersonal clarity, community and societal awareness, and intentional disruptive action. The UME curriculum committee adopted the competencies and the GME Committee promoted their inclusion in all residency programs. In 2021 and 2022, we will repeat Items from an April 2020 student survey on perceptions of the cultural competency and disparities curriculum and the degree to which health equity discussions were encouraged to evaluate impact. The annual ACGME resident survey includes an item on health disparities that we will also track.

Innovation's strengths and limitations:
The institutional commitment to this work is broad. While the competencies have been developed and disseminated, assessment tools need to be developed and faculty development efforts, initiated.

Feasibility and transferability for adoption:
Our competencies are aspirational in scope and expectation but the process and outcomes can be used by others to move efforts forward in their own institutions.

References:

1. Bailey ZD, Grieger N, Agenor M, Graves J, Linos N, Bassett MT. Structural racism and health inequities in the USA: Evidence and interventions. Lancet, 389: 1453-63, 2017.
2. Castillo EG, Isom J, DeBonis KL, Jordan A, Braslow JT, Rohrbaugh R. Reconsidering systems-based practice: Advancing structural competency, health equity, and social responsibility in graduate medical education. Acad Med, 95:1817-22, 2020.

3. Metzl JM and Hansen H. Structural competency: Theorizing a new medical engagement with stigma and inequality. Soc Sci Med, 103:126-133, 2014.

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Transitioning a Capstone Course from In-Person to Virtual Increases Student Engagement and Satisfaction

Submission Type: Innovation Abstract
Accepted as: Oral Presentation
Region: SGEA

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Abstract Body:

Objective or purpose of innovation:
The COVID-19 outbreak in March 2020, required us to pivot our "Transition to Residency" (TTR) course from in-person to virtual. We sought to keep students satisfied and engaged while participating in a virtual course.

Background and/or theoretical framework and importance to the field:
TTR courses exist to prepare for the shift from student to resident. Engagement is important. Since 2016, we require graduating students to complete a TTR course to prepare for the transition to internship and residency. The course is traditionally in-person with "required" sessions, a required minimum number of electives, and specialty track days. COVID-19 forced the course virtual.

Design: Instructional methods and materials used:
We utilized a learning management system for delivery. The curriculum was delivered synchronously and asynchronously with live sessions and specialty track days via WebEx, pre-recorded sessions, online learning modules, discussion boards, and a team-based learning project. We incorporated real-time feedback from the course director, daily communications, and added new sessions based on requests/feedback. We measured student satisfaction both quantitatively and qualitatively, and engagement quantitatively.

Outcomes:
From 2016-2019, 86.6% of students "agreed/strongly agreed" the TTR course overall helped prepare them for internship, 70.1% for the required sessions, 94.5% for the elective sessions, and 89.6% for the specialty track day. 2020's TTR course saw increases overall: 98.2% agreed/strongly agreed for the course overall, 93% for required sessions, 98.2% for electives, and 82.6% for the specialty day. Student engagement rose as students averaged 1.8 more electives than required in 2020 vs.1.6.

Innovation's strengths and limitations:
The virtual course saw highest satisfaction ratings overall since 2016. Student engagement and satisfaction increased as students were able to self-direct their learning. Specialty tracks saw a satisfaction decrease due to hands-on components being eliminated. We plan to deliver a hybrid course model of in-person and virtual in 2021 to hopefully maximize engagement and satisfaction.

Feasibility and transferability for adoption:
Adoptability can occur with learning management systems and telecommunication resources like WebEx or Zoom.

References:
1. Teo AR, Harleman E, O'Sullivan PS, Maa J. The key role of a transition course in preparing medical students for internship. Acad Med. 2011;86(7):860-865. doi:10.1097/ACM.0b013e31821d6ae2

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A strategic questioning tool to promote critical thinking with clinical learners

Submission Type: Innovation Abstract
Accepted as: Poster
Region: SGEA

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Abstract Body:

Objective or purpose of innovation:
We created a pocket tool for medical educators to learn questioning strategies specifically for the clinical learning environment.

Background and/or theoretical framework and importance to the field:
Questioning learners has been described as one of the most essential and significant teaching practices [1-2]. However, health professions faculty generally ask questions that prioritize memorizing facts instead of thinking about these facts [1-3]. Purposefully asking higher-cognitive questions can instead foster critical thinking and clinical reasoning skills more effectively.

Design: Instructional methods and materials used:
We developed a strategic questioning tool that models frameworks such as Bloom's revised taxonomy 4 to explicitly show faculty how to develop higher-order questions for clinical teaching. The tool was introduced to 37 faculty in one-hour, inter-professional workshops. Participants practiced questioning strategies, and developed questioning prompts with a pre/post-assessment.

Outcomes:
The majority (71%) of pre-workshop questioning prompts were lower-order thinking skills, while most (69%) post-workshop prompts reflected higher-order thinking skills. Prompt complexity based on Bloom's revised taxonomy increased significantly ($W=5387.5$, $p< < 0.001$) after the workshop. Many participants reported that they had not known how to implement strategic questioning frameworks in clinical instruction before the training.

Innovation's strengths and limitations:
The main limitation is that these outcomes reflect faculty skill development but not the direct implementation of these skills with learners. However, the strengths of the tool are: 1) we have demonstrated that the strategic questioning tool and training are effective, and 2) many active learning strategies do not transfer easily to clinical settings, so this tool fills a gap because it was developed specifically for clinical instruction.

Feasibility and transferability for adoption:
The strategic questioning tool was developed to be a versatile and practical tool for medical educators to adapt in various clinical settings. We have also submitted this tool and related workshop to MedEdPORTAL to deliver the training at other institutions and adapted it as virtual grand rounds presentations to enhance strategic questioning in clinical education.

References:

1. Hausmann JS, Schwartzstein RM. Using questions to enhance rheumatology education. Arthritis Care & Research. 2019;71(10):1304-1309.
2. Tofade T, Elsner J, Haines ST. Best practice strategies for effective use of questions as a teaching tool. American Journal of

Pharmaceutical Education. 2013;77(7):9.
3. Magas CP, Gruppen LD, Barrett M, Dedhia PH, Sandhu G. Intraoperative questioning to advance higher-order thinking. The American Journal of Surgery. 2017;213(2):222-226.
4. Anderson LW, Krathwohl D, Airasian P. A taxonomy for learning, teaching, and assessing: A revision of Bloom's taxonomy of educational objectives. New York, NY: Longman; 2001.

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Clinical Reasoning Remediation for the Graduate Medical Learner in Need

Submission Type: Innovation Abstract
Accepted as: Poster
Region: SGEA

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Abstract Body:

Objective or purpose of innovation:
To identify specific clinical reasoning deficits among struggling trainees amenable to targeted intervention.

Background and/or theoretical framework and importance to the field:
It is common for graduate medical learners to struggle with clinical performance during training. Assessment of clinical reasoning skills is difficult in standard clinical training situations where evaluation often focuses on factual information and direct observation is limited. Yet, no standard protocol exists for remediation of clinical reasoning struggle.

Design: Instructional methods and materials used:
We designed a step-wise program known as COACH (Committee on Achieving Competence Through Help) to accept graduate medical learners not meeting appropriate milestones:

1. A remediation specialist performs a global assessment to identify the primary performance deficit: medical knowledge, clinical reasoning, organization, professionalism, or communication.
2. Those with a primary or secondary clinical reasoning deficit are referred for targeted case-based assessment to further delineate the deficit along the clinical reasoning pathway: gathering data, generating hypotheses, problem representation, refinement of initial hypotheses, and developing a management plan.
3. An individualized remediation plan is created with targeted coaching exercises.
4. Ongoing evaluation

Outcomes:
Over four years, COACH assessed 90/820 (11%) graduate medical learners from 14 departments. Clinical reasoning was a primary or secondary deficit in 27/90 (30%). Targeted assessment revealed deficits in the following domains: gathering data (11/27); generating hypotheses (20/27); problem representation (23/27); hypothesis refinement (8/27); management plan (15/27). After reassessment by their CCC, the majority of learners improved their performance and 74% (14/19) are currently in good standing in their respective programs.

Innovation's strengths and limitations:
This unique program utilizes a step-wise approach, including global and targeted assessment, to identify specific clinical reasoning deficits amenable to individualized, targeted intervention through coaching. Limitations include the inherent, somewhat subjective nature of the case-based targeted assessment.

Feasibility and transferability for adoption:
Though limited by the substantial time investment required for clinical reasoning coaching, this is a structured, generalizable approach to the remediation of learners with clinical reasoning deficits.

References:

1. Yao DC, Wright SM. National survey of internal medicine residency program directors regarding problem residents. JAMA

2000; 284(9):1099-1104.
2. Dupras DM, Edson RS, Halvorsen AJ, Hopkins RH, McDonald FS. “Problem residents”: prevalence, problems and remediation in the era of core competencies. Am J Medicine 2012;125(4):421-5.
3. Guerrasio J, Garrity MJ, Aagaard EM. Learners deficits and academic outcomes of medical students, residents, fellows, and attending physicians referred to a remediation program, 2006-2012. Acad Med 2014; 89:352-358.
4. Warburton KM, Goren E, Dine CJ. Comprehensive Assessment of Struggling Learners Referred to a Graduate Medical Education Remediation Program. J Grad Med Educ. 2017 Dec;9(6):763-767.
5. Parsons A, Clancy CB, Rencic JJ, Warburton KM. Targeted Strategies to Remediate Diagnostic Reasoning Deficits. Acad Med. Accepted for Publication. August 2020.

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Introducing Disability Education into Medical School Curriculum

Submission Type: Innovation Abstract
Accepted as: Poster
Region: SGEA

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Abstract Body:

Objective or purpose of innovation:
Improve disability education for medical students through curricular modifications and direct interactions with people with disabilities (PWD).

Background and/or theoretical framework and importance to the field:
Nearly 1 in 5 people in the U.S. are living with a disability [1], yet medical curricula often lack formal disability sensitivity training. Due to comorbidities, communication challenges, and unique presentations PWD face, physicians need specialized training to effectively treat this population. We are working to introduce disability education into our medical school curriculum.

Design: Instructional methods and materials used:
After discussions with educational leadership we designed a longitudinal curricular plan and implemented the first activity. During the initial course for first-year medical students, we conducted a disability awareness panel composed of self-advocates, family members, and medical professionals. Five panelists shared experiences regarding interactions with PWD, experiences with health care professionals, and invited questions from the audience. Students completed Pre- and post-session surveys assessing changes in attitudes regarding PWD. The next phases of the project include (1) modification of existing Problem Based Learning cases to represent PWD, opening discussions on unique needs, (2) development of an elective allowing students to explore specialties dedicated to treating PWD including community engagement components, and (3) a simulated patient experience with a PWD for use in pre-clerkship training.

Outcomes:
Results from the initial activity showed that students (n=126) demonstrated a significant increase in the understanding of the differently abled, and belief that those with disabilities can live fulfilling lives, and a significant decrease in the belief that the differently abled are a burden on society.

Innovation's strengths and limitations:
We are encouraged by our initial findings. By continuing discussions of PWD throughout the curriculum, we hope to reinforce these principles and perceptions and provide students with the skills and confidence to appropriately interact with and care for PWD.

Feasibility and transferability for adoption:
Each step of this longitudinal curriculum design provides flexibility and adaptability to other school's needs.

References:

1. Brault, MW. Americans With Disabilities: 2010. The United States Census Bureau. https://www.census.gov/library/publications/2012/demo/p70-131.html. Published July 2012. Updated January, 2018. Accessed October 4, 2020.

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Building Students' Cultural Competency Through a Medical Spanish Program with Service Learning and Community Engagement Components

Submission Type: Innovation Abstract
Accepted as: Poster
Region: SGEA

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Abstract Body:

Objective or purpose of innovation:
To build medical students' cultural competency through a longitudinal medical Spanish program (MAESTRO) to better serve patients with limited English proficiency (LEP).

Background and/or theoretical framework and importance to the field:
Thirty percent of Hispanics in the United States have LEP[1]. Language discordance results in poor patient-clinician communication and healthcare disparities[2]. Medical Spanish education seeks to address health disparities by improving medical students' patient-centered communication skills in Spanish.

Design: Instructional methods and materials used:
The preclinical curriculum included workshops, standardized patient interactions, technology-based learning, community service, and optional community engagement. Eight students completed this curriculum and participated in community engagement. Pre- and post-program surveys (July 2019 and November 2020, respectively) assessed self-reported understanding of social determinants of health (SDOH), comfort working with immigrant patients and those with LEP, and knowledge of community resources.

Outcomes:
Early survey data suggests that completion of the preclinical portion of MAESTRO and associated community engagement increased student understanding of SDOH, comfort with immigrant patients and those with LEP, and knowledge of community resources. More respondents reported comfort recognizing SDOH in their community (75% pre, 100% post). Fifty percent of pre-survey respondents reported feeling comfortable caring for newly arrived immigrants, compared to 87.5% of post-survey respondents. More students reported feeling comfortable caring for patients with LEP and those of varying immigration status (62.5% pre, 87.5% post).

Innovation's strengths and limitations:
Strengths include applying best practices and addressing core competencies per expert consensus; longitudinal teaching and assessment; and collaboration between a student design team, undergraduate Spanish faculty, and medical educators[3]. Limitations include sample size and limited survey anchors. Future work will refine the survey instrument and use multiple cohorts' responses.

Feasibility and transferability for adoption:
Fifty-five percent of medical schools report some medical Spanish education, though educational and assessment methods vary widely, and faculty report barriers such as lack of curricular time and insufficient institutional support[4,5]. This innovation demonstrates the feasibility of addressing reported barriers and incorporating core competences[3].

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Launching an Institutional Team Science Training Initiative: Initial Steps in Developing Pilot Training Sessions

Submission Type: Innovation Abstract
Accepted as: Poster
Region: SGEA

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Abstract Body:

Objective or purpose of innovation:
Biomedical research is transitioning to a team science model that brings together multidisciplinary experts in integrated research teams to pursue scientific discovery.1 How can clinical and translational science workforce development leaders assist investigators in transitioning from roles as solo researchers to members of high functioning teams?

Background and/or theoretical framework and importance to the field:
A planning committee comprised of researchers, administrators, educators and evaluators was tasked with developing a comprehensive team science training program to enhance the preparation and productivity of clinical and translational research (CTR) teams. Our goal is to deliver skills-oriented topics and training that address opportunities and challenges unique to research teams.

Design: Instructional methods and materials used:
Following a literature review aimed at identifying institutional approaches to team science training and using basic tenets of instructional design, 2 we conducted a needs assessment and defined goals for pilot training. We considered strategies to meet the learning needs of research teams, identified resources available, selected instructional materials, and initiated development of process and performance evaluations.2-4

Outcomes:
A 20-item needs assessment addressing team formation, morale, orientation, assessment, management, and communication was administered to CTR early-career investigators and trainees (response rate: 31/47; 66%). Items judged by at least 40% of respondents to be of greatest interest were effective communication, being an effective team leader, managing people, working in multidisciplinary teams, and demonstrating mutual respect and trust. These findings guide our instructional design.

Innovation's strengths and limitations:
Creating a comprehensive team science training program for over 200 researchers and trainees in a two-year timeframe is daunting. Following classic instructional design tenets provides necessary structure.2

Feasibility and transferability for adoption:
We will offer a blended-learning approach to pilot training for CTR early-career researchers (2/2021) and trainees (5/2021). Instructional objectives, methods, resources, and evaluations from our initial pilots

will be shared along with our roadmap for a comprehensive team science training planned for presentation to all CTR teams by December 2022.

References:
1 Bennett, L.M. & Gadlin, H. Collaboration and Team Science: From Theory to Practice. Journal of Investigative Medicine. 2012;60(5):768-75.
2 Gagne,R.M. & Briggs, L.J. Principles of Instructional Design. Holt, Rinehart, & Winston: New York, 1974.
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A Pilot Faculty Development Curriculum using TED Masterclass to Develop Skills in Presenting Micro-lectures

Submission Type: Innovation Abstract
Accepted as: Poster
Region: SGEA

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Abstract Body:

Objective or purpose of innovation:
The purpose of this pilot faculty development curriculum was to train health professions educators on the creation and delivery of micro-lectures.

Background and/or theoretical framework and importance to the field:
In this digital age, students often prefer to receive information in short bursts which focuses their attention without the cognitive overload of the longer, traditional lecture.1 Faculty too often need micro-lectures for the flipped classroom environment.2 Yet, faculty need training on how to create and deliver these micro-lectures. Successful training could lead to a radical transformation of lecture delivery in both synchronous and asynchronous environments. TED Masterclass is an established online, self-paced training program with lessons and activities aimed to improve one's ability to create and deliver short, impactful presentations.3

Design: Instructional methods and materials used:
A 6-month educator development curriculum was built to enhance micro-lecture creation and delivery skills. The interprofessional curriculum consisted of seven online, self-paced TED Masterclass skill-building lessons along with three, hour long virtual Accountability Sessions facilitated by the authors. These sessions focused on learned skills and the application to health professions education. Participants also prepared and delivered a TED-style micro-lecture for peer and facilitator feedback.

Outcomes:
Twenty-three health professions educators enrolled in the pilot curriculum. At the end of the 7 months, 13 (57%) educators completed the program and several more are pending completion. Participants who attended all three of the Accountability Sessions were more likely to complete the program on time. Positive feedback has been received regarding the Masterclass lessons, Accountability Sessions, and complete curriculum.

Innovation's strengths and limitations:
This novel interprofessional educator development curriculum was successfully conducted remotely despite the pandemic. Limitations include a 43% incompletion rate as of December 2020.

Feasibility and transferability for adoption:
Using the established TED Masterclass program as an asynchronous training platform and supplemental synchronous small-group accountability sessions is a feasible and transferable model. Several lessons were learned in this pilot cohort which will be useful for planning future cohorts.

References:

1. Zazulia, AR, Goldhoff, P. Faculty and Medical Student Attitudes about Pre-Clinical Classroom Attendance, Teach Learn Medicine. 2014; 26(4):327-334. doi: 10.1080/10401334.2014.945028
2. Scagnoli, N. 7 Things You Should Know About Microlectures. EDUCAUSE Learning Initiative: ELI Website. https://library.edu/resources/2012/11/7-things-you-should-know-about-microlectures. Published Nov 2012. Accessed

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Using Digital Badges as a Tool for Curricular Engagement

Submission Type: Innovation Abstract
Accepted as: Poster
Region: SGEA

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Abstract Body:

Objective or purpose of innovation:
The purpose of this innovation was to utilize digital badges to improve student engagement and task completion in an MD preclinical course.

Background and/or theoretical framework and importance to the field:
Prior studies indicate that gamified environments improve student academic performance and increase motivation. Digital badges are an innovative curricular technique that incorporate gamification into a course. Badges encourage learner control and recognize an accomplishment, skill, or trait in a novel way.

Design: Instructional methods and materials used:
Badges were incorporated into 19 modules within an existing course. Each module had a series of assignments that students completed in-person and/or virtually along with a final assessment. The assessment requirements varied and included quizzes, assignment uploads, and completion of tasks in other systems. If the student met the assessment requirement, a badge was awarded for the module. Once a student earned all their badges, they completed the course.

Outcomes:
Administratively, transitioning to digital badges greatly improved student assignment completion rates and coordinator admin time. In the course evaluations, the students found badges to be fun, easy to use, promoted friendly competition, and kept them on top of tasks. We are now expanding the use of badges into other courses.

Innovation's strengths and limitations:
While badging has a multitude of uses, in this application it was a perceived as a valuable motivational and organizational tool for the students. Utilizing badges in this application should be used sparingly as its novelty could wane from user fatigue.

Feasibility and transferability for adoption:
Badging is a free, easy to use, tool that is built into most LMS applications and can be implemented in as little as an hour. Badges can be used in lieu of a numerically graded assignments, used in conjunction with graded work to bolster its significance, or they can be used to create a standalone educational program where badges are stacked for a more substantial digital credential that certifies the mastery of a skill or educational achievement.

References:

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2. Garnett, T., & Button D. (2018). The use of digital badges by undergraduate nursing students: A three-year study. Nurse Education in Practice, 32, 1-8.
3. Hurst, E. J. (2015). Digital badges: Beyond learning incentives. Journal of Electronic Resources in Medical Libraries, 12(3), 182-189. doi: 10.1080/15424065.2015.1065661
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Open CaSe: A Virtual Assessment for Student Preparedness for Step 2 CS Psychiatric Complaint

Submission Type: Innovation Abstract
Accepted as: Poster
Region: SGEA

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Abstract Body:

Objective or purpose of innovation:
To prepare students for reasoning and performing well on Step 2 CS. The goal is to assess current reasoning abilities, and to provide student feedback these skills. This can be done in a virtual format remotely.

Background and/or theoretical framework and importance to the field:
Step 2 Clinical Skills (CS) is required for licensure and often for medical school graduation. The exam influences matching into residency (1) and correlates with internship performance (2). A goal directed activity with feedback is the best use of time and best predictor for future learning and practice (3), so this activity was created as a small-stakes assessment to provide data on student clinical reasoning in a standardized way along with feedback for them to improve on these skills.. The COVID pandemic has promoted demand in remote and virtual learning assessments such as CaSe.

Design: Instructional methods and materials used:
At the midpoint of the rotation, students in a proctored videoconference watch a brief video interview and review a handout containing a face sheet with vitals and any related paperwork (e.g. clock-drawing screening, completed questionnaires, etc.), similar to the real Step 2 CS testing environment. Students then have 15 minutes to complete a Patient Progress Note in the Step 2 CS format. The authors grade the note on a case specific rubric and give the student feedback.

Outcomes:
We will present the information from previous post-encounter surveys and grade distributions, both from in-person and virtual administrations alongside rubric revisions.

Innovation's strengths and limitations:
CaSe is administered virtually and remotely and may be tailored to curricular needs (e.g. adjusting rubric). Technical difficulties may occur, but have been infrequent and simple to resolve.

Feasibility and transferability for adoption:
CaSe requires no specialized technology, a proctor, and an evaluator. It may be done remotely and tailored to curricular needs.

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1. Singer, Mona. "How Competitive is the Match?" Presentation. NRMP. Originally given 13 November 2016, accessed 6 July 2018. http://www.nrmp.org/wp-content/uploads/2016/11/Signer-AAMC-Annual-Meeting-2016.pdf
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3. Ambrose et al. Chapter 5: "What Kind of Practice and Feedback Enhance Learning?" How Learning Works. San Francisco: Jossey-Bass, 2010.

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Assessment of Graduate Medical Education Knowledge on Race and Kidney Function

Submission Type: Innovation Abstract
Accepted as: Poster
Region: SGEA

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Abstract Body:

Objective or purpose of innovation:
We hope to assess the knowledge of residents and fellows on race and the manner it is utilized to calculate kidney function through estimated glomerular filtration rate.

Background and/or theoretical framework and importance to the field:
Glomerular filtration rate is utilized to estimate kidney function and is essential to medical practice across a wide variety of specialties. The guideline-recommended equation in adults includes a term for race (specified as black versus nonblack), which improves the accuracy of GFR estimation by accounting for differences in non-GFR determinants of serum creatinine by race in the study populations used to develop the equation (Levey, Titan, Powe, Coresh, & Inker, 2020). It has been accepted in many medical and social sciences that race is a social construct (Fontanarosa & Bauchner, 2018). The use of race as a precision variable in the eGFR equation has been called into question due to the strength of evidence for its use in the calculation. This has resulted in some medical institutions excluding race from the eGFR calculation. Based on a recent study by Diao et al, clinical implications of removing the race modifier in the eGFR equation could include reducing delays in the diagnosis of CKD, nephrology consultation and kidney transplant referrals in black adults(Diao et al., 2020) . There are limited studies examining the awareness of physicians on race as a variable in the eGFR equation.

Design: Instructional methods and materials used:
Methods will involve online surveying of both residents and fellows pre/post didactic lecture via Zoom on eGFR and race.

Outcomes:
NA

Innovation's strengths and limitations:
In this study, we hope to identify knowledge gaps of residents and fellows on race and eGFR. It is our hope to increase awareness of the implications of race in medicine in this feasible study. We realize limitations include transferability to other institutions that may not be large academic centers and availability of residents/fellows to attend the lecture.

Feasibility and transferability for adoption:
See above

References:

1. Diao, J. A., Wu, G. J., Taylor, H. A., Tucker, J. K., Powe, N. R., Kohane, I. S., & Manrai, A. K. (2020). Clinical Implications of Removing Race From Estimates of Kidney Function. JAMA. doi:10.1001/jama.2020.22124
2. Fontanarosa, P. B., & Bauchner, H. (2018). Race, Ancestry, and Medical Research. JAMA, 320(15), 1539-1540. doi:10.1001/jama.2018.14438

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COVID-19 in Spanish-speaking populations virtual clinical elective

Submission Type: Innovation Abstract
Accepted as: Poster
Region: SGEA

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Abstract Body:

Objective or purpose of innovation:
Expanding programming in an existing medical Spanish curriculum1 to understand and address vulnerabilities of Spanish-speaking communities to COVID-19 could provide useful insight and training to Spanish-speaking medical students.

Background and/or theoretical framework and importance to the field:
Limited English language proficiency is a significant barrier to care2 for the 41 million Spanish-speaking people of the US.3 Compounded by the disproportionate effects of COVID-19 on Latinx communities,4,5 the diminished quality of health outcomes has produced higher morbidity and mortality in these populations.6

Design: Instructional methods and materials used:
The course was administered in Spanish to 12 third- and fourth-year students during April-May 2020 as a four-week elective. Teaching methods illustrating the unique impact of COVID-19 on Spanish-speaking patients included readings, podcasts, live presentations from guest lecturers, and small group discussions. Students then applied knowledge gained through course instruction to outreach projects, including one service-learning project of disseminating information about COVID-19 in Spanish and another involving telemedicine in UNC Internal Medicine clinics. Course appraisal was assessed using the university's standard evaluation of four metrics of quality, as provided below. These items were rated on a scale of 1 (poor) to 10 (excellent).

Outcomes:
Students were highly satisfied with the course and rated course organization ($\bar{x}$ 9.3), learning objectives ($\bar{x}$ 9.7), teaching and formative feedback ($\bar{x}$ 9.6), and learning environment ($\bar{x}$ 9.7).

Innovation's strengths and limitations:
Based on positive feedback on the course's achievement of learning objectives, the course succeeded in enhancing students' understanding of the specific challenges faced by Spanish-speaking populations during the pandemic. Incorporation of a service learning project equipped students with strategies to inform their Spanish-speaking patients about COVID-19. Limitations included difficulty adapting course content to evolving information about the pandemic and lack of peer-reviewed literature on COVID-19 at the time of course creation.

Feasibility and transferability for adoption:
The course's virtual format facilitates transferability. However, other institutions may not have sufficiently robust faculty support to initiate programming in Spanish.

References:

1. Reuland D, Frasier P, Slatt L, & Alemán M (2008). A Longitudinal Medical Spanish Program at One US Medical School. J Gen Intern Med, 23(7):1033-1037. doi: 10.1007/s11606-008-0598-9.
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Third Year Medical Student Bootcamp

Submission Type: Innovation Abstract
Accepted as: Poster
Region: SGEA

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Abstract Body:

Objective or purpose of innovation:
Goal: to prepare students for the transition to the clinical clerkship (third) year

- Demonstrate an ability to preround on inpatients
- Perform key physical exam skills on simulators
- Write a progress note and orally present in SOAP format
- Demonstrate prerounding proficiency with the EHR

Background and/or theoretical framework and importance to the field:
Preparing medical students to start third year can be challenging. While an orientation about expectations is often provided, there is typically not an opportunity for targeted practice and formative feedback. We created a week-long bootcamp to develop core skills before students begin clinical clerkships.

Design: Instructional methods and materials used:
Instructional methods:

- SOAP format didactic and progress note requirements
- Physical exam simulation sessions with clinician feedback
- OSCE to practice follow-up encounters using standardized patients
- Oral presentations of OSCE cases in small group
- Feedback on progress notes
- Fourth-year student panel providing pre-rounding tips
- EHR practice with competency assessment

Materials used:

- Nine hospitalized patient OSCE cases in a variety of specialties
- Standardized rubric for notes and presentations
- Faculty facilitators
- Standardized patients
- EHR worksheet to demonstrate proficiency

Outcomes:

- Clerkship directors reported better prepared third year students
- Course evaluations show strong student satisfaction. They report feeling more prepared and comfortable starting third year

Innovation's strengths and limitations:
The focus on formative feedback and skill development allows students to practice without added pressure of grading. The timing of the bootcamp in the week immediately preceding clerkships promotes strong student buy-in. Challenges include faculty time for feedback and standardized patient costs.

Feasibility and transferability for adoption:
At our institution, this bootcamp occurs as a part of a longitudinal required course; however, it could exist on its own as part of an extended orientation to third year. Using standardized cases provides comparable feedback but could be accomplished with actual patient encounters.

References:
1. Bills, JL, et al. (2013). "Effectiveness of a Clinical Intervention for MD/PhD Students Re-entering Medical School." Teaching and Learning in Medicine. 25(1): 77-83.
2. Jackson, MB, et al. (2009). "Impact of a Pre-Clinical Clinical Skills Curriculum on Student Performance in Third-Year Clerkships." JGIM. 24: 929-933.
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Teaching Students to Call Effective Consults

Submission Type: Innovation Abstract
Accepted as: Poster
Region: SGEA

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Abstract Body:
Objective or purpose of innovation:

- List the 5 C's of calling an effective consult
- Formulate a focused question for a consultant based on a patient case
- Perform an effective consultation call

Background and/or theoretical framework and importance to the field:
Calling consults is an essential function of a physician. It is a teachable skill with application to most clinical clerkships. By teaching and assessing this skill in medical students, they can contribute to patient care and be better prepared for internship.

Design: Instructional methods and materials used:
Instructional methods:

- 30-minute didactic about the 5 C's of calling consults
- Small group role-play practice with a faculty facilitator. Each student practices by 'calling' another student in the room, who is acting as the consultant, with their own script and recommendations. Other students provide feedback based on the rubric.
- Each student is assessed by their facilitator

Materials used:

- Faculty facilitation guide
- 8 patient cases and 8 consultant scripts (one for each student)
- Assessment rubric
- Final assessment case

Outcomes:

- 150 third year medical students across three campuses participated
- All students passed this assessment (most with 100%)
- Course evaluations indicate students felt prepared to call consults and wished these materials were covered before clerkships
- Clerkship directors reported improved consult quality

Innovation's strengths and limitations:
This skill is frequently practiced by medical students but not often formally taught or assessed. Strengths include the opportunity for practice with immediate formative feedback and a standardized assessment. The scripts for caller and consultant make the answers standard, which facilitates feedback. Challenges included consistent faculty development of the facilitators.

Feasibility and transferability for adoption:

This innovation can be easily adapted for other programs. For us, this occurs within a longitudinal third-year course but could occur in any third-year clerkship. The biggest resource needed is faculty time to train, facilitate the workshops, and assess students after the workshop. However, the standardized cases and rubric makes this easier.

References:

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Student Led Design of a Pre-matriculation Program for Medical Students

Submission Type: Innovation Abstract
Accepted as: Oral Presentation
Region: SGEA

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Abstract Body:

Objective or purpose of innovation:
This study aims to provide a systemic view of medical school pre-matriculation programs (PMPs) and apply that data alongside Nova Southeastern University Kiran C. Patel College of Allopathic Medicine (NSU MD) faculty and student perspectives to design a PMP best fit to the needs of incoming NSU MD students.

Background and/or theoretical framework and importance to the field:
PMPs are increasingly being implemented by medical schools to ease transition of incoming students but are widely variable. In the literature, there is scarce information on how these programs currently exist systemically throughout different medical schools. As such, we have identified a need for a systematic view of PMPs, especially considering recent events such as the COVID-19 pandemic and transitioning of USMLE Step 1 to pass/fail. We have also recognized the potential of NSU MD's PMP to become more effective at transitioning incoming students.

Design: Instructional methods and materials used:
Four surveys were created to understand the perspectives of NSU MD faculty and students regarding PMPs. We have also used previous feedback and personal experiences as post-didactic students to jumpstart design of the new PMP.

Outcomes:
Based on survey data, we developed a self-guided curriculum by creating scaled learning objectives relative to matriculant counterparts. The entire course is asynchronous and delivered online in order to increase access to all students. Key topics were selected based on student and faculty feedback.

Innovation's strengths and limitations:
PMPs are an increasingly popular tool of medical schools that we are exploring. We have created five surveys to help accomplish the goals of this ongoing project: contribute to medical education knowledge regarding PMPs, create a system to identify students for the NSU MD PMP, and design a new PMP that best prepares incoming students for NSU MD.

Feasibility and transferability for adoption:
The customizable approach allows for easy adaption to other medical schools. The remote nature of post-COVID-19 medical schools has created a need and practicality for asynchronous pre-matriculation programs.

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Creating upstanders not bystanders: How to use simulation as a platform to recognize and respond to microaggressions

Submission Type: Innovation Abstract
Accepted as: Poster
Region: SGEA

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Abstract Body:

Objective or purpose of innovation:
Mayo Clinic Florida identified a need for increased recognition and a framework for responding to microaggressions in the clinical setting. We developed a simulation-based approach with focus on identifying and responding to microaggressions using the GRIT framework (Gather, Restate, Inquire, Talk it Out).

Background and/or theoretical framework and importance to the field:
The GRIT framework employs a 4 tier approach to responding to microaggressions. This framework is grounded in assuming positive intent, supporting inquiry of others' experiences, perspectives, and values, and highlights debriefing as an important step in the response. Traditional simulation methods utilize role-play techniques, which is not an ideal approach when learners may be placed in a vulnerable position. We aimed to use the GRIT framework in a novel simulation format where learners assumed an active-bystander role in the scenario.

Design: Instructional methods and materials used:
Our simulation utilized a novel approach to learner involvement. We aimed to preserve learner integrity by engaging them in an active-observation role in each scenario. Standardized patient actors portrayed the roles of the microaggressor and target, and the learners were involved as allies to the individual experiencing the microaggression. This allowed the learners to practice recognition and response to complex dynamics that occur in the clinical education setting. We developed 3 different scenarios to incorporate multiple interactions where microaggressions can occur (provider-patient, patient-provider, and educator-trainee.)

Outcomes:
Due to the overwhelmingly positive response from our learners, this session will be repeated for our faculty and additional learner groups.

Innovation's strengths and limitations:
This approach allows for learners to actively participate in both the scenario and debriefing session in small groups led by more than one experienced educator immediately after the scenario. One limitation was the effort and time required to develop, practice (dry run), and execute this exercise.

Feasibility and transferability for adoption:
We plan to implement additional scenarios in the next iteration, and make the scenarios and debriefing guide available both inside and outside our own institution.

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A Recipe for Change: Both Implementing and Evaluating Motivational Interviewing Virtually in a Family Medicine Clerkship

Submission Type: Innovation Abstract
Accepted as: Oral Presentation
Region: SGEA

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Abstract Body:

Objective or purpose of innovation:
The purpose of this study is to determine if motivational interviewing skills can be successfully both taught and evaluated virtually in a family medicine clerkship.

Background and/or theoretical framework and importance to the field:
Fostering behavior change is a critical skill for physicians-in-training to master.1 Training clinicians in motivational interviewing skills has been shown to positively impact patient health behaviors.2

Design: Instructional methods and materials used:
Students (n=70) were given a one-hour virtual interactive training session on motivational interviewing. At the end of the 3-week clerkship, students were assessed by a standardized patient in a 10-minute virtual Objective Structured Clinical Examination (OSCE) using the Behaviour Change Counseling Index (BECCI).3 The BECCI is comprised of 11 items with a 5-point Likert rating scale (0=Not at All; 1=Minimal; 2=To Some Extent; 3=A Good Deal; 4=A Great Extent). The score was calculated based on the total percentage of points students received out of 44.

Outcomes:
The mean score for all learners (n=70) was 82.79% (SD=14.22). The median score was 86.36% (IQR 72.72- 93.75). We conducted a frequency analysis to determine the most selected rating(s). The most frequent rating given by evaluators on all survey items was a 4 (A Great Extent). The second most frequently selected rating was a 3 (A Good Deal). The scores on the BECCI suggest students were able to employ motivational interviewing skills in a virtual counseling session.

Innovation's strengths and limitations:
Virtual platforms can both deliver and assess clinical skills education. 4

Limitations of this study include the absence of a control group. A follow up study should assess if students retain their motivational interviewing skills.

Feasibility and transferability for adoption:
Educators have refined key motivational interviewing skills for medical students.1 The BECCI is a readily available evaluation tool that adapted well to virtual use.

References:

1. Kaltman S, Tankersley A. Teaching Motivational Interviewing to Medical Students: A Systematic Review. Acad Med. 2020 Mar;95(3):458-469. doi: 10.1097/ACM.0000000000003011. PMID: 31577585.
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It Takes a JEDI (Task) Force to Move the Curriculum Graveyard

Submission Type: Innovation Abstract
Accepted as: Poster
Region: SGEA

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Abstract Body:

Objective or purpose of innovation:
Develop solutions for concerns raised by underrepresented in medicine (URIM) students and prepare all students to address the impact of racism on patient care and health equity.

Background and/or theoretical framework and importance to the field:
Despite a strong Office for Diversity and Health Equity (ODHE), UFCOM URIM students raised concerns that there remains inadequate attention to health disparities and antiracism in the curriculum, microaggressions persist, and some assessments are biased. Recent events highlighting racial injustice sparked widespread outcries including from the medical community.1-3 This empowered students to form the Justice Equity Diversity Inclusion (JEDI) Task Force to push for a more welcoming environment for URIM students and curriculum to promote cultural humility, address disparities, and prepare students to be antiracists.

Design: Instructional methods and materials used:
In 2020, URIM medical and physician assistant students created and led the JEDI Task Force with guidance from ODHE. All URIM students were electronically surveyed for personal experiences and concerns coupled with town hall discussions. Those perspectives informed by LCME guidelines, literature review, and input from class leadership were synthesized into recommendations for curricular change and a more inclusive culture that was presented to the dean and education leadership.

Outcomes:
Leadership embraced many of the recommendations leading to:

- URIM student town halls
- Updated code of ethics
- Unconscious bias education
- Curriculum race and culture review4
- Clerkship grading reassessment
- New content (health disparities, social determinants of health, racism in medicine)
- Teaching images updated to reflect diversity
- URIM lecturers recruited from outside UFCOM

Innovation's strengths and limitations:
Recommendations were literature informed and tied to LCME guidelines. Curriculum changes and student advocacy alone cannot address larger issues of structural racism.

Feasibility and transferability for adoption:
Similar changes are occurring at other institutions but the pace and breadth of changes (during a

pandemic) was largely due to strong student advocacy and very supportive leadership. By empowering students, other schools can move their "curriculum graveyard".

References:
1. AMA Board of Trustees pledges action against racism and police brutality. American Medical Association. Published June 23, 2020. Accessed December 12, 2020. https://www.ama-assn.org/about/board-trustees/ama-board-trustees-pledges-action-against-racism-and-police-brutality
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High-Fidelity Simulation in Medical Education as a Tool to Teach Cultural Humility

Submission Type: Innovation Abstract
Accepted as: Poster
Region: SGEA

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Abstract Body:
Objective or purpose of innovation:

1) To examine if U.S. residency programs were utilizing high-fidelity simulation to teach culturally sensitive care.
2) To evaluate if the high-fidelity simulation mannequins used by residency programs across the country accurately reflected the racial and sex breakdown of the U.S. population.

Background and/or theoretical framework and importance to the field:
Although one of the main benefits of high-fidelity mannequins is that they are realistic, to our knowledge there are no studies that examine the diversity of high-fidelity mannequin skin color and sex or if this teaching modality is being used to teach medical trainees how to provide culturally sensitive care.

Design: Instructional methods and materials used:
A questionnaire was administered to simulation center faculty. Logistic regression analysis and chi-squared goodness of fit test were used. Expected proportions were estimated from U.S. Census data on racial and ethnic distribution in the population.

Outcomes:
The majority of respondents (64%, n = 32) reported that at least one of their cases was written to include a mannequin of a specific race/ethnicity. Half (n =25) of the programs reported utilizing high-fidelity simulation mannequins to teach culturally sensitive care. The observed mannequin skin color did not differ significantly from the estimated U.S. population, $\chi2$ (2, N = 658) = 0.69, p >.01. The observed mannequin sex assignment was not equally distributed in the population $\chi2$ (1, N = 620) = 27.2, p <.01, with a higher number of male (n = 375) mannequins than female (n = 245). The logistic regression model for programs with cases that involve certain races/ethnicities was statistically significant $\chi2(7) = 14.2$, p = .047.

Innovation's strengths and limitations:
Strengths: This was a large study that asked a novel question.

Limitations: The total number of mannequins reported did not always match the totals they listed under each male/female as well as light/medium/dark-skinned category.

Feasibility and transferability for adoption:
This study draws attention to the disparity in representation of high fidelity simulation mannequins.

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California Oregon Medical Partnerships to Address Disparities in Rural Education and Health (COMPADRE) Wellness Program

Submission Type: Innovation Abstract
Accepted as: Oral Presentation
Region: WGEA

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Abstract Body:

Objective or purpose of innovation:
COMPADRE, funded by the AMA's Reimagining Residency initiative, is a program addressing physician workforce shortages in northern California and Oregon. A collaboration between OHSU and UC Davis, COMPADRE includes a comprehensive curriculum to prepare learners for practice in under-resourced communities. This presentation is about the development of the wellness curriculum addressing the unique needs of learners from 2 medical schools and 31 geographically and resource-diverse residency programs (rural, urban, tribal, primary care, and surgical specialties).

Background and/or theoretical framework and importance to the field:
COMPADRE recognizes that preparing providers who are committed to working in under resourced settings also requires a well-being focus that emphasizes connection, community, and preventing burnout.

Design: Instructional methods and materials used:
Following a needs assessment and identification of 31 wellness champions, the wellness curriculum was developed and includes:

1. Learner Wellness Plan
2. Four Wellness Modules with an introductory video and learner video on:
    a. Origin Stories & Narrative Reflection
    b. Belonging & Community
    c. Resilience & Mental Health
    d. Purpose & Vision
3. Peer Support Training added in response to the COVID pandemic.
4. Wellness Assessment to monitor learner wellness and the impact of the curriculum.

Outcomes:
The development and dissemination of a large-scale wellness curriculum and “best practices” that can be applied broadly throughout the UME and GME continuum and community.

Innovation’s strengths and limitations:
Strengths include establishing wellness focused relationships and the incorporation of input from all programs to build a generalizable wellness curriculum. Limitations include the pandemic causing stress on programs with reduced capacity to innovate and embrace new programs and the ever-present limitations on learner time for additional activities.

Feasibility and transferability for adoption:
The model is portable and virtual, easy to implement on a large scale across a broad geographic region, and easily executed during the pandemic. This model is also a learning menu, where each site decides

how to engage and with what, an approach that many learners prefer allowing them to optimize and customize the experience.

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Integrating Human Trafficking Education into Medical Curricula

Submission Type: Innovation Abstract
Accepted as: Oral Presentation
Region: WGEA

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Abstract Body:

Objective or purpose of innovation:
To implement and evaluate a human trafficking curriculum into medical student education.

Background and/or theoretical framework and importance to the field:
Human trafficking victims commonly interact with healthcare practitioners, but are not often identified (1,2). Few medical schools incorporate formal education on human trafficking (3,4).

Design: Instructional methods and materials used:
The curriculum includes a standardized patient (SP) experience and lecture. First year medical students interviewed an SP exhibiting "red flags" for sex trafficking followed by a physician facilitator-led discussion in an observed small group setting. This was integrated into a mandatory sexual history taking course. The next year, a two hour lecture was presented to all first year medical students as part of their longitudinal clinical skills course and prior to the SP case. Curricula objectives included trafficking definitions, victim/survivor identification, intersections with healthcare, and local impact and resources.

Outcomes:
A multiple choice survey to assess knowledge about sex trafficking was developed and administered to students pre and post intervention. Twenty nine out of 50 (58%) students participated. Students demonstrated a significant increase in percentage correct from baseline on: trafficking definition ($p < 0.05$) and scope ($p < 0.05$); health consequences ($p < 0.001$); victim identification ($p < 0.01$); referral to services ($p < 0.001$); legal issues ($p < 0.05$); and security ($p < 0.001$). Core content themes identified as opportunities for future improvement included prevention and appropriate treatment.

Innovation's strengths and limitations:
This interactive and portable curriculum appears to reach course objectives. Further evaluation of this pilot curriculum is necessary to evaluate effectiveness and promote replication at other medical schools.

Feasibility and transferability for adoption:
This curriculum can be replicated at other institutions. The lecture slides can be obtained and presented by any individual who has completed the AMWA-PATH Learn to Identify and Fight Trafficking (LIFT) training (5). In addition, the standardized SP script and facilitator instructions are published online.

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residency training. JAMA Pediatr. 2014;168(9):793–794.
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A Longitudinal Curriculum for Supporting Residents' Educator Identity Formation

Submission Type: Innovation Abstract
Accepted as: Oral Presentation
Region: WGEA

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Abstract Body:

Objective or purpose of innovation:
We aimed to design a longitudinal curriculum that promotes educator identity formation (EIDF) for internal medicine residents enrolled in a clinician-educator track (CET).

Background and/or theoretical framework and importance to the field:
Developing an educator identity increases clinicians' satisfaction and ongoing investment in a medical education career. Residents interested in medical education frequently enroll in CETs, however completion inconsistently leads to EIDF. Re-designing CETs using strategies for promoting identification from the community of practice framework (CoP) may enhance CETs' impact on EIDF.

Design: Instructional methods and materials used:
We utilized Kern's framework to design a year-long curriculum comprising medical education experiences and weekly virtual seminars. Informed by CoP's modes of belonging, we sought to support learners engaging in education activities (via situated experiences in all five educator portfolio domains), imagining themselves as educators (through reflection on personal development), and aligning with education best practices (by applying education theories to their education practices). Seminars' objectives included summarizing educator dilemmas, describing and applying education theories, and identifying career development opportunities. Educational strategies included story-sharing, reflection, small-group discussions, and lectures.

Outcomes:
Nine residents have completed one-third of the curriculum. Data collection is ongoing. We used Qualtrics surveys following each seminar to evaluate the curriculum. The response rate was 74% (45/61). 94% of survey responses somewhat agreed or strongly agreed seminars accomplished their objectives. Qualitative responses included comments that aligned with the modes of belonging. Participants valued interactions with aspiring clinician-educators, protected time to plan and reflect on career development, and opportunities to learn education theories.

Innovation's strengths and limitations:
This novel CET design has been well-received by participants and seems to promote EIDF. Robust data evaluating impact on EIDF remain lacking in this early phase of implementation.

Feasibility and transferability for adoption:
We designed this curriculum to be facilitated by chief and senior residents and to require minimal faculty full-time equivalents. It is transferable to programs with access to situated educator experiences and protected curricular time for residents.

References:

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MS4-led Virtual Rounding Elective to Facilitate Clerkship Transition Among MS2s

Submission Type: Innovation Abstract
Accepted as: Oral Presentation
Region: WGEA

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Abstract Body:

Objective or purpose of innovation:
Develop a peer-to-peer virtual elective to help second-year medical students (MS2s) gain skills and confidence during the transition to clerkships

Background and/or theoretical framework and importance to the field:
Many transition-to-clerkship courses focus solely on oral presentations [1-2], provide students with limited opportunities to practice [2], utilize standardized patients [2-7] or are resource-intensive [1, 3, 5, 8-10].

Design: Instructional methods and materials used:
Using Kern's "Curriculum Development for Medical Education" guidebook [11], we created a three-day Virtual Rounding elective for MS2s transitioning into clerkships. On day one, students attended a one-hour interactive session that introduced best practices for electronic health record chart review, oral presentations, and literature searches. On days two and three, MS2s reviewed the chart of a hospitalized patient, prepared an oral presentation, and delivered the presentation during a one-hour videoconferencing session with their "Virtual Rounding team" consisting of 4 MS2s and a fourth-year medical student [MS4] tele-instructor. The MS4 provided feedback on student presentations and taught relevant clinical topics.

Outcomes:
79% (41/52) of participating MS2s and 91% (10/11) of tele-instructors responded to matched pre/post curriculum surveys. Using 5-point Likert scales and comparing results with paired t-tests [12], we found that MS2s' overall confidence approaching clerkships increased from 2.1 to 2.75 ($p<0.001$). All MS4s reported benefit from teaching, with a pre-post increase from 2.9 to 3.5 ($p=0.005$) in their confidence in mentoring new clerkship students.

Innovation's strengths and limitations:
Strengths include the flexible virtual learning environment, a formal curricular focus on important skills traditionally learned informally in the clinical environment, and incorporation of peer-to-peer teaching that benefitted MS2s and MS4s. Limitations include the lack of patient interaction and the brevity of the elective, which may limit skill development and exacerbate imposter syndrome in some students based on narrative comments.

Feasibility and transferability for adoption:
Our innovative model is highly feasible given no clinical faculty are needed; it can be readily transferred to any school with MS4s willing to facilitate the virtual elective.

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Style Guide for Diversity, Equity, Inclusion, and Accessibility in Medical Educational Content

Submission Type: Innovation Abstract
Accepted as: Oral Presentation
Region: WGEA

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Abstract Body:

Objective or purpose of innovation:
Stanford EdTech is developing a style guide and policy to inform all new online course content creation with best practices for promoting diversity, equity, inclusion (DEI), and accessibility.

Background and/or theoretical framework and importance to the field:
As Schools of Medicine, including Stanford University, establish statements on DEI and its importance in driving innovation and excellence by building an equitable and just present and future, none have published style guides for their written content. EdTech seeks to establish simple and explicit DEI directives for our communication and content, because building more inclusive courses will reach more learners and improve health equity.

Design: Instructional methods and materials used:
We will research best practices from media and higher education on avoiding exclusive language, and incorporating inclusive language, diverse representation of on-screen and audio characters, and accessibility to all learners.

Outcomes:
We will use this to create a written metric for evaluating the inclusivity of existing content and serving as a checklist for future content.

Innovation's strengths and limitations:
No amount of research and reflection can ever yield a faultless and permanent style guide for inclusivity because DEI and accessibility are iterative processes that are always open to feedback. But by talking about DEI and accessibility through every project and providing a template for inclusion, we'll make it easy to make good choices, and keep improving.

According to foundational learning theory, stimuli are crucial to establishing learner attention. We hope to engage learners by incorporating diverse stimuli such as inclusive language, representative audio and visual assets, and design for learner variability. Applying this style guide will innovate pedagogical design and normalize inclusive communication for medical school communities.

Feasibility and transferability for adoption:
After this session, participants will be able to use our DEI metric to evaluate the inclusivity of written statements. Participants will also be able to use our DEI and accessibility style guide—or create their own template—to enhance inclusivity of their online communications.

References:

1. Diversity at Stanford Medicine. Diversity. Diversity at Stanford Medicine. https://med.stanford.edu/diversity.html. Published 2020. Accessed December 11, 2020.
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Increasing Diversity in Faculty via the Academy for Development in Academic Medicine Program

Submission Type: Innovation Abstract
Accepted as: Oral Presentation
Region: WGEA

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Abstract Body:

Objective or purpose of innovation:
Increase the diversity of academic faculty through the creation of a pipeline program that allows participants to develop the skills necessary to be competitive candidates in academic faculty careers.

Background and/or theoretical framework and importance to the field:
Having a diverse faculty body creates excellence in teaching, research, and patient care (AAMC 2016). However, recruiting faculty who are underrepresented in medicine can be challenging. Few pipeline programs focus on residency to faculty and many of those programs concentrate on building interest in academia and not necessarily on development of academic skills (Ahn et al., 2018).

Design: Instructional methods and materials used:
The Academy for the Development in Academic Medicine, or ADAM program, was developed by the Office of Diversity and Inclusion and consists of a 3-year longitudinal program. The program offers lunch time educational sessions to resident physicians and PhD students. Each year is themed and includes content on teaching, leadership, and scholarship. Participants also complete a longitudinal scholarly project.

Outcomes:
The ADAM program is in its 4th year with over 70% of participants identifying with at least one of our mission-based diversity groups for faculty. Pre to post survey results show significant increase self-efficacy ratings related to content that was covered each year. Many graduated participants report full time academic faculty appointments or some teaching component in post-graduation employment.

Innovation's strengths and limitations:
Strengths: the ADAM program is centered around building skills in academic medicine, fosters collaboration across medical specialties and sciences, demonstrates high level of satisfaction among participants, and rotating curriculum allows participants to receive all content over a 3-year residency program. Limitations: it can be hard for participation due to demands of resident education so the use of recorded sessions keeps participation consistent.

Feasibility and transferability for adoption:
The ADAM program is built upon using existing faculty experts in the various subject matters, limited administrative support needed, can use existing support such as online course platforms and facilities, and minimal budget requirements.

References:
1. Ahn, J., Martin, S.K., Farnan, J.M. & Fromme, B. (2018). The graduate medical education scholars track: developing residents as clinician-educators during clinical training via a longitudinal, multimodal, and multidisciplinary track. Academic Medicine, 92(2), 214-219.

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Using the SAMR framework to evaluate technological and situational affordances for online learning

Submission Type: Innovation Abstract
Accepted as: Oral Presentation
Region: WGEA

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Abstract Body:

Objective or purpose of innovation:
The COVID-19 pandemic illuminated an existing problem: faculty do not always have the tools needed to make decisions about which educational technologies to incorporate in their teaching. A framework is needed to assist faculty in evaluating the affordances of the learning context. We have revised the Substitution, Augmentation, Modification, and Redefinition (SAMR) framework to serve as a guide for faculty in making these decisions.

Background and/or theoretical framework and importance to the field:
To use technology effectively, one must first know what it can do. Affordance theory is a relational framework that was originally designed to analyze the interaction of subjects and their environments [1]. In recent years, affordance theory has been increasingly applied to the study of information communication tools (ICTs) and education technology. The learning environment involves both situational and technological affordances that must be evaluated during the instructional design process.

Design: Instructional methods and materials used:
We reviewed the literature of the existing SAMR framework and its limitations to inform the adapted framework. We drew on affordance theory and instructional design principles to identify what elements would be most useful to faculty during the decision-making process.

Outcomes:
We will use Kirkpatrick's model [2] to determine the efficacy of the framework. Because this innovation is designed for faculty use, we will evaluate faculty response to the tool (Level 1 - Reaction), whether it informs their understanding of educational technology (Level 2 - Learning), and whether it contributes to improved teaching practices (Level 3 - Behavior).

Innovation's strengths and limitations:
Strengths - The new framework is easy to use and will assist faculty in working through the complex decisions inherent in technology use.

Limitations – We have not yet had the opportunity to gather data from faculty who are using the framework to guide their instructional design.

Feasibility and transferability for adoption:
This tool requires no implementation and very little training. It is easily adaptable for any educational context.

References:

1. Greeno, J. G. (1994). Gibson's affordances. Psychological Review 101(2), 336-342.
2. Kirkpatrick, D.L., & Kirkpatrick, J.D. (1994). Evaluating Training Programs. San Francisco, CA: Berrett-Koehler Publishers

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Reducing access inequity to age-friendly care through an interprofessional geriatric behavioral health telementoring curriculum for rural primary care providers

Submission Type: Innovation Abstract
Accepted as: Oral Presentation
Region: WGEA

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Abstract Body:

Objective or purpose of innovation:
To increase rural providers' geriatric behavioral health knowledge and encourage age-friendly health system innovation.

Background and/or theoretical framework and importance to the field:
Rural older Oregonians have few geriatric behavioral health resources, leading to significant access inequity. Oregon's rural providers have little training in, or access to, geriatric specialty care. To address this gap, we used the Project ECHO model to create the state's first geriatric behavioral health telementoring curriculum for rural primary care providers.

Design: Instructional methods and materials used:
Our interprofessional multi-institution team of geriatric specialists created a 12-session virtual-platform-based biweekly curriculum on geriatric behavioral health (e.g., depression, insomnia) anchored in the age-friendly health system "4Ms" (mentation, medications, mobility, what matters). Project ECHO format included brief teaching talks and participant-driven case consultation/discussion. Participants started practice-based age-friendly system-improvement projects. Participants completed Likert-scale and qualitative pre/post course evaluations. Data analyses included descriptive statistics and thematic coding.

Outcomes:
Thirty-five participants (71% rural and/or underserved) enrolled. Seventeen participants completed pre- and post-course evaluations. Comfort levels improved in areas of diagnosing and treating conditions, such as dementia (41% pre- vs 81% post-course indicating "comfortable"). Participants cited highest benefits from peer-case discussions, particularly around managing medications in older adults with behavioral health diagnoses. Qualitative themes showed participants planned to incorporate de-prescribing and age-appropriate assessments into practice. Most (65%) participants shared course knowledge within their practice. Practice improvement projects were diverse and included sharing an insomnia electronic health record tool.

Innovation's strengths and limitations:
We demonstrated an approach to "decentralized" geriatric behavioral health knowledge. Strengths included our faculty team who represented 5 professions and 3 healthcare systems and provided broad experiential teaching, as well as our systems-focused approach that encouraged individual and practice-level changes. Limitations included a lack of formal systems-improvement science training for participants, limited statewide representation of practices, and modest post-course evaluation completion.

Feasibility and transferability for adoption:
A telementoring approach to expanding age-friendly care is feasible with an interprofessional team and virtual platform technology.

References:
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The Basics of Podcasting for Medical Education

Submission Type: Innovation Abstract
Accepted as: Oral Presentation
Region: WGEA

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William Bottini, Stanford University School of Medicine

Abstract Body:

Objective or purpose of innovation:
To implement podcasting as a tool for delivering medical education content

Background and/or theoretical framework and importance to the field:
In the past decade podcasting has seen a meteoric rise in popularity, largely due to the ease with which one can produce and listen to them. With shows ranging from self-help to criminal investigations, the application of podcasting is limitless, yet there have been relatively few ventures into medical education that utilize this platform. Our objective was to take advantage of podcasting to highlight the innovative work produced by educational technology groups at Stanford Medicine and beyond.

Design: Instructional methods and materials used:
The design of our podcasts takes inspiration from popular interview shows, like Marc Maron's WTF podcast, where the primary focus is speaking with invited guests, and secondary emphasis on host-led segments. This format allows us to survey the medical education landscape through direct interactions, which is a continuation of the patient-centered storytelling and methodologies that our team has incorporated into all our productions.

Outcomes:
Using a combination of home recording setups, Adobe Audition, and a subscription to a hosting platform, our team currently hosts two bi-monthly podcasts, EdTech Café and Teachers in White Coats, both of which have garnered hundreds of listens and a 5-star average rating.

Innovation's strengths and limitations:
A few of podcasting's strengths include the ease with which podcasting can be adopted by beginners, the wide reach that can be achieved because of its online delivery, and the high level of listener engagement due to its emphasis on literal human voices. A limitation, however, is that it is difficult to achieve revenue and scalability as a sub-industry within medical education.

Feasibility and transferability for adoption:
This proposal aims to highlight the ease with which podcasting can be adopted and instituted. Anyone can learn to podcast after a quick study of the technology, recording process, and tools to edit and distribute the content.

References:

1. Baek A. Potent Podcasts. https://spark.adobe.com/page/671T9DeamnJAn/. Published 2017. Accessed December 12, 2020.

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MedEd Models: Leveraging Social Media to Disseminate Education Theory

Submission Type: Innovation Abstract
Accepted as: Oral Presentation
Region: WGEA

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Abstract Body:

Objective or purpose of innovation:
We aimed to disseminate core concepts of education theories by creating native content for a social media platform (Twitter©) and posting the content using a dedicated social media handle (@MedEdModels).

Background and/or theoretical framework and importance to the field:
Social media is an important tool in medical education. Twitter-based tutorials ("Tweetorials") are increasingly used to teach clinical content to a broad audience. However, leveraging Tweetorials as a tool for exposing medical educators to education theory has not been described.

Design: Instructional methods and materials used:
We developed original digital content and a strategy to build a social media following for a new Twitter handle. To build a following, we launched teaser content in the month prior to our first Tweetorial and followed the accounts of popular medical education journals and individual users based on key hashtags (e.g., #MedTwitter, #MedEd). To create Tweetorial content, we used widely available computer programs (LucidChart©, Photoshop©) and subscribed to an icon repository (NounProject©). Topics were selected based on the availability of expert reviewers, and included subjects such as cognitive load theory and critical theory. Each Tweetorial included tweet text, 8-10 original images, an expert's comment, and a reading list. Faculty experts reviewed Tweetorials prior to posting.

Outcomes:
At post-launch day 90, the account had 685 followers and posted content had garnered 119,300 impressions (average engagement rate 4.4%) and 152 retweets. The 14-day average retweets, impressions, and engagement rate for the account's first five Tweetorials were 23, 5,973, and 17.2%, respectively. The faculty review team expanded into an international group, partially by recruitment through social media.

Innovation's strengths and limitations:
Our experience suggests wide dissemination of education theory using a social media platform is feasible. Future work should evaluate for evidence of learning from Tweetorial content.

Feasibility and transferability for adoption:
Our innovation utilizes a free, user-friendly social media platform. However, access to content experts and graphics editing software are possible barriers to transferability.

References:

1. MedEd Models. Cognitive Load Theory. Twitter (@MedEdModels). Sept 1, 2020. https://twitter.com/MedEdModels/status/1300766149974523904?s=20.
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tool. Int Rev Psychiatry. 2015;27(2):140-146. doi:10.3109/09540261.2015.1015502
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Narrated Virtual Posters to Disseminate Work and Foster Collaboration among Transition to Residency Educators: Adapting the TTR Symposium in the Time of COVID

Submission Type: Innovation Abstract
Accepted as: Oral Presentation
Region: WGEA

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Abstract Body:

Objective or purpose of innovation:
The 2020 National Transition to Residency (TTR) Symposium was adapted from in-person to virtual. To showcase work related to TTR courses and foster collaboration among educators, we included narrated virtual posters.

Background and/or theoretical framework and importance to the field:
The cancellation of conferences has left a void in opportunities for dissemination of work and professional networking. Many conferences have transitioned to virtual formats, and there are increasing reports of the use of virtual posters with little outcome data.1-3

Design: Instructional methods and materials used:
We distributed a call for abstracts related to TTR courses. Planning committee members independently rated abstracts and determined acceptances by consensus. Presenters submitted slides of posters and short videos describing their work. These were posted on the TTR educators website (https://www.ttreducators.com/symposium-2020-virtual-posters) prior to the symposium for public viewing. Presenters and attendees could leave comments on posters' webpages.

Outcomes:
More than 220 educators participated in the free symposium (versus 48 in 2019 [capacity was limited by physical space]). There were 33 abstract submissions (versus 10 in 2019) with 23 accepted. In the 6 weeks following posting of the narrated posters, there were 1411 views for posters' webpages and 85 comments. On the symposium evaluation, 64/99 respondents answered "Please indicate how valuable each of these sessions was to you in your work as a TTR educator: -Virtual poster session" with a mean score of 2.6/3.0.

Innovation's strengths and limitations:
Likely due to decreased cost, increased convenience, and the lack of space limitation, the 2020 virtual TTR symposium had a significant increase in participants and >300% increase in abstract submissions. The narrated virtual posters were frequently viewed, generated robust discussion via comments, and were well received by attendees. Narrated virtual posters are a promising means of sharing work and collaborating, potentially on a larger scale than in person meetings. Additional research into their effectiveness is needed.

Feasibility and transferability for adoption:
Our approach can be adapted to a wide variety of settings.

References:

1. Diegel-Vacek L, Carlucci M. An Innovative Virtual Poster Session for Doctor of Nursing Practice Student Project Presentations.

J Nurs Educ. 2020 Dec 1;59(12):697-700. doi: 10.3928/01484834-20201118-07. PMID: 33253399.
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Redesign of a Transition to Residency Course in the era of COVID: Leveraging technology and peer engagement

Submission Type: Innovation Abstract
Accepted as: Oral Presentation
Region: WGEA

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Amanda Phares, University of California Davis
Zachary Chaffin, University of California Davis
Jennifer Plant, University of California Davis

Abstract Body:

Objective or purpose of innovation:
To use virtual methods to provide practical instruction in the knowledge, skills, and attitudes students need during internship.

Background and/or theoretical framework and importance to the field:
We have offered a two-week Transition to Residency (TTR) course at UCDavis since 2018. Following Kern's model for curriculum development(1) and guided by the AAMC's Core EPAs for Entering Residency(2), we developed a small-group, simulation-based core experience during which students work in specialty-based cohorts to care for virtual patients from presentation to discharge. In response to COVID, UCDavis moved all Spring 2020 coursework online necessitating a rapid redesign of our in-person TTR course.

Design: Instructional methods and materials used:
We moved the entire course to the Canvas learning management system (LMS). We limited synchronous activities, instead posting short recorded lectures on key topics. We cohorted students into specialty groups and created 3-4 member teams. Each team worked through the core curriculum to care for their panel of virtual patients, posting work (e.g. admission orders, video recordings of handoffs), requesting specific feedback, and providing feedback to other assigned teams via discussion boards. Residents and faculty provided additional feedback on discussion boards and offered virtual office hours.

Outcomes:
117 students participated in April 2020. Compared to the in-person course offered May 2019, the virtual version scored higher on 8/8 items on the course evaluation including: Format of sessions was appropriate (6.06 vs 5.87/7), I received regular/constructive feedback (5.91 vs 4.97/7) and Overall quality (5.90 vs 5.32/7). Many comments about "the most useful aspects of the course" referenced the team-based approach to assignments and feedback.

Innovation's strengths and limitations:
We made improvements to our previously in-person TTR course by leveraging the technology of an LMS and engaging students via teamwork and peer feedback guided by specific prompts. In-person simulation-based training remains important and will be reintroduced when possible.

Feasibility and transferability for adoption:
Our approach can be applied to courses of different lengths and specialty-specific courses.

References:

1. Thomas PA, Kern DE, Hughes MT, Chen BY. Curriculum Development for Medical Education: A Six-Step Approach: Third Edition. Baltimore, MD: Johns Hopkins University Press, 2016

2. Associated of American Medical Colleges. The Core Entrustable Professional Activities (EPAs) for Entering Residency. https://www.aamc.org/what-we-do/mission-areas/medical-education/cbme/core-epas Accessed October 27, 2019.

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Application by Design: An Evidence-based Toolkit for Designing Team-based Learning (TBL) Sessions in Health Systems Science (HSS)

Submission Type: Innovation Abstract
Accepted as: Oral Presentation
Region: WGEA

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Abstract Body:

Objective or purpose of innovation:
To provide educators with evidence-based design tools for designing TBL sessions that feature complex application exercises in HSS.

Background and/or theoretical framework and importance to the field:
Team-based Learning (TBL) has been a popular element of active learning since the early 2000s[1,2,3], and trends in curriculum renewal[4] have increased interest in using TBL as an active learning protocol in teaching areas such as health systems science. Based on a systematic analysis of the published literature and TBL lesson plans published through MedEdPortal since 2005, medical educators need support to create application exercises that support the complex multi-domain thinking that are the hallmark of TBL.

Design: Instructional methods and materials used:
This innovation presents the results of the first phase of a design-based research[5] project to create and test a series of tools to help physicians and instructional designers to think through the backwards-design process of creating challenging TBL application exercises. In particular, the scaffolding tools 1) help instructors to design exercises that draw from basic, clinical, and health systems science, and 2) support instructors in aligning objectives, applications, and pre-session work at higher levels of Bloom's Taxonomy. Tools currently include a Master Planning sheet, a syllabus template, a didactic presentation template, a TBL session template, and an end-of-session evaluation.

Outcomes:
The scaffolding tools were introduced to attendees at a large workshop of forty participants in 2020, and have been piloted with two additional faculty at our institution. The tools have been updated after each pilot to improve clarity and effectiveness.

Innovation's strengths and limitations:
Substantial opportunities exist to improve the design and implementation of TBL sessions in UME. The scaffolding tools support instructors as they design more complex TBL experiences that are better aligned with the strengths of the methodology.

Feasibility and transferability for adoption:
The TBL-HSS design toolkit is a procedural kit that allows instructors at any institution to easily implement the tools. Video instructional guides are also included to support adoption.

References:
1. Searle NS, Haidet P, Kelly PA, Schneider VF, Seidel CL, Richards BF. Team learning in medical education: Initial experiences at ten institutions. Acad Med. 2003;78(10 SUPPL.):55-58. doi:10.1097/00001888-200310001-00018
2. Burgess AW, McGregor DM, Mellis CM. Applying established guidelines to team-based learning programs in medical schools: A systematic review. Acad Med. 2014;89(4):678-688. doi:10.1097/ACM.0000000000000162
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5. Novak, DA, Hallowell R. Design-based Research in Medical Education (DBR-ME). Acad Med. 2020 (In Press).

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Digital Health Justice: A scalable blended-learning course on equity and access in digital health for UME students

Submission Type: Innovation Abstract
Accepted as: Oral Presentation
Region: WGEA

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Abstract Body:

Objective or purpose of innovation:
This course was designed to scaffold UME students' abilities to critically appraise the products, practices, and policies that are emerging in the digital health space. Through the course, students examine and evaluate how these new technologies provide new opportunities for improving the lives of patients, but also where these technologies may fail to do so for all patients.

Background and/or theoretical framework and importance to the field:
Digital health comprises a powerful new category of technologies that provide patients with better information and tools to manage their health and disease states[1]. Evidence about the efficacy of technologies such as mobile devices, activity trackers, and portable medical assessment tools emerges every day, but recent trends spotlight that these technologies may reinforce disparities in care[2]. The course was designed to help students identify potential equity issues in a range of digital health technology areas.

Design: Instructional methods and materials used:
The online course included five content-oriented sessions based on challenge-based learning cycles[3] (CBLCs), and focused on the topics of patient-centeredness in digital health, structural competency, bias in artificial intelligence and machine learning, privacy, and virtual reality-based therapies. In the culminating session, students present and share their own CBLCs to the class.

Outcomes:
An analysis of students' CBLC products indicate that learning about the equity dimensions makes students more critical consumers of information about digital health and less prone to accepting hype. Students were most interested in learning more about issues related to health justice and AI and machine learning, serious games, and wearable devices.

Innovation's strengths and limitations:
The use of the CBLC format ensures that the course design is scalable, and can accommodate a range of topics based on local expert availability, course length, and student interests.

Feasibility and transferability for adoption:
The course structure may be shared to other institutions, who can easily update or add additional sessions on their own online platforms. New instructors can customize the content based on their expertise.

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Pre-clerkship Content Maps of Health Care Problems in a Problem-Based Learning Curriculum: Monitoring Themes, Gaps, Redundancies and Accreditation Requirements

Submission Type: Innovation Abstract
Accepted as: Oral Presentation
Region: WGEA

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Abstract Body:

Objective or purpose of innovation:
Our purpose was to map the learning priorities of each Health Care Problem (HCP) in our Problem-Based Learning (PBL) curriculum, alongside applicable accreditation standards1 and the graduation objectives and sub-objectives of the John A. Burns School of Medicine (JABSOM).2

Background and/or theoretical framework and importance to the field:
JABSOM utilizes PBL as its main educational method in the pre-clerkship curriculum, covering over 90 HCPs in six theme- or organ-based curricular units over two years. Each curricular unit monitors its own content designed to advance students toward the graduation objectives, but JABSOM did not have a process to monitor all applicable accreditation standards and graduation objectives longitudinally throughout the PBL curriculum.

Design: Instructional methods and materials used:
First, existing Liaison Committee on Medical Education accreditation standards and likely future standards relevant to pre-clerkship education were extracted. JABSOM's graduation objectives and sub-objectives were then mapped alongside appropriate standards. Secondly, main identifying information, including relation to other HCPs, chief complaint, key history, physical exam and diagnostic findings, and diagnosis, were determined for each HCP. Thirdly, the HCP learning priorities were mapped to the compiled list of standards/objectives, with associated pre-clerkship ExamSoft identification numbers, if present.

Outcomes:
All HCPs will be listed at the course and curriculum level, to easily identify gaps in content and assessment, as well as which standards and objectives the HCPs address.

Innovation's strengths and limitations:
The HCP content map will serve as a resource for pre-clerkship course directors to monitor family and disease themes that run throughout the curriculum, determine gaps and redundancies for essential topics and themes alongside their assessment, and track evolving accreditation requirements to prepare for future site visits. Challenges include absent degree of emphasis (introduction, reinforcement, mastery), the limitation of this map to HCPs, and the exclusion of concurrent lectures, labs, clinical skills and other pre-clerkship activities.

Feasibility and transferability for adoption:
This process is time-intensive, but feasible and easily transferred to uniquely map standards and objectives of other programs.

References:

1. Liaison Committee on Medical Education. Standards, Publications & Notification Forms. Data Collection Instrument for Full

Accreditation Surveys, Effective Academic Year 2019-2020. https://lcme.org/publications/#DCI. Published March, 2018. Accessed December 13, 2020.
2. University of Hawai'I John A. Burns School of Medicine Objectives for Graduation. https://jabsom.hawaii.edu/wp-content/uploads/2020/07/Graduation-Objectives-2020-approved-6-26-20.pdf Approved June, 2020. Accessed December 13, 2020.

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Virtual Shadowing as an Effective Approach to Gaining Exposure to the Field of Emergency Medicine

Submission Type: Innovation Abstract
Accepted as: Oral Presentation
Region: WGEA

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Abstract Body:

Objective or purpose of innovation:
We aimed to: virtually expose students to emergency medicine (EM) during the COVID-19 pandemic, facilitate mentor-mentee relationships between faculty and students, and foster a peer-to-peer support network among similarly interested students.

Background and/or theoretical framework and importance to the field:
Shadowing is an important part of medical student education. The COVID-19 pandemic limited medical students' hospital access during their first two years. In response, we implemented a novel virtual shadowing system to provide safe exposure to the emergency department (ED).

Design: Instructional methods and materials used:
Six EM faculty hosted 2-hour virtual shadowing experiences. Up to 10 students per shift signed up via signupgenius.com. Before each shift, students were given an overview to read about EM. Virtual shadowing was conducted using a HIPAA-compliant Zoom account on an ED issued mobile telehealth iPad. The physician brought the iPad into the room, obtained consent from patients, and ensured students were able to see the encounter. Between visits, students were encouraged to ask questions using the chat function. A short de-briefing followed each shift. Students were sent a post-encounter survey via Google Forms.

Outcomes:
Survey responses were collected between October 20, 2020, and November 20, 2020. The overall response rate was 96.6% (56/58 completed). Of respondents, 46 (82.1%) rated the experience as "effective" or "very effective" at providing exposure to EM. 53 (94.6%) said they would participate in virtual shadowing again, and 48 (85.7%) would do virtual shadowing in another specialty were it available.

Innovation's strengths and limitations:
Virtual shadowing was easy to implement and allowed multiple students to shadow at a time, but was limited by lack of ability to witness and learn physical exam skills and absence of 1:1 exposure to faculty.

Feasibility and transferability for adoption:
Virtual shadowing was an effective way for students to shadow physicians in the ED, and should be explored as an accessible way to expose students to a broad array of specialties.

References:
NA

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Growing an inclusive workforce of child and adolescent psychiatrists

Submission Type: Innovation Abstract
Accepted as: Oral Presentation
Region: WGEA

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Abstract Body:

Objective or purpose of innovation:
The objective of this innovation is to grow a more inclusive workforce of child and adolescent psychiatrists (CAP) targeting medical students through a summer immersion program and yearlong program that focuses on community engagement, cultural sensitivity, sponsorship, collaborative learning, and scholarly projects. By increasing diversity in the CAP workforce and addressing the challenges many physicians face to advance, we will be better able to engage with our communities and foster equity in our workplaces.

Background and/or theoretical framework and importance to the field:
There is a worldwide shortage of child and adolescent psychiatrists (World Health Organization Atlas). In the United States, there are only 8,300 practicing psychiatrists with a projected need of 30,000 (AACAP). Over 15 million youth require the expertise of a quality Child and Adolescent Psychiatrist. Half of all psychiatric illnesses begin before age 14 and 75% begin before age 24 (Kessler 2005). In order to achieve health equity and reduce disparity, our CAPs must reflect the society they serve and advocate for those communities.

Design: Instructional methods and materials used:
The program offers engaging guest speakers and events such as documentaries and panels, didactics, group supervision, community engagement, mental health literacy presentations, clinical exposure, and a novel child and adolescent psychiatry preclerkship elective. Instructional methods also include a priority on student well-being and personal growth.

Outcomes:
In the pilot summer program that was virtual, all medical students expressed positive reviews of the program, sharing that they would recommend the program to other students and that the program has increased their interest in the field of CAP. Qualitative comments from focus groups were rich with input of the virtual format, focus on cultural sensitivity, and process of the experience.

Innovation's strengths and limitations:
The strengths include the positive quantitative and qualitative reviews from the student participants. The limitations include small sample sizes and pilot phase.

Feasibility and transferability for adoption:
This program is eager to share components and offer framework/details with other institutions/programs.

References:
1. Kessler RC, Angermeyer M, Anthony JC, et al. Lifetime prevalence and age-of-onset distributions of mental disorders in the World Health Organization's World Mental Health Survey Initiative. World Psychiatry 2007; 6: 168–76
2. Volpe T, Boydell KM, Pignatiello A. Choosing child and adolescent psychiatry: factors influencing medical students. J Can Acad Child Adolesc Psychiatry. 2013;22(4):260–7. World Health Organization, 2017. Mental Health ATLAS.
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4. Meeting the Demand for Health: Final Report of the California Future Health Workforce Commission. January 2019. https://futurehealthworkforce.org/wp-content/uploads/2019/01/4.-meeting-the-demand-for-health-jan-2019-draft-appendix-a1.pdf.
5. NRMP. Psychiatry Match Results Statistics. 2018. http://www.nrmp.org/wp-content/uploads/2018/01/Psychiatry-Match-Results-Statistics-AY2018.pdf.
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Teaching Structural Competency to Medical Students During a COVID-19 Stay-at-Home Order

Submission Type: Innovation Abstract
Accepted as: Oral Presentation
Region: WGEA

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Abstract Body:

Objective or purpose of innovation:
In the wake of the COVID-19 crisis during the Spring of 2020, an urgent need arose to offer online electives because of the suspension of in-person activities. To answer this need, and to pilot new health justice curriculum that was already in the planning stage, a peer-reviewed structural competency curriculum (1) was adapted into a 2-week online selective tailored to medical students. This course also allowed for a discussion of disparities that were spotlighted by COVID-19's disproportionate impact on communities of color and the poor.

Background and/or theoretical framework and importance to the field:
Structural competency examines how inequitable social, political and economic structures that perpetuate poverty, racism and other injustices contribute to illness for marginalized individuals and populations (2). Structural competency strives to understand the deeper root problems in social systems and seeks transformative solutions that can ameliorate suffering of people whose experience of oppression has resulted in sickness.

Design: Instructional methods and materials used:
The course adapted a daylong in-person training for health professionals developed by the SCWG (1) into a 2-week selective for medical students. The first 3 sessions covered an overview of the relationship between structures and health, the origins of structural competency and how to respond to harmful structures in and beyond the clinic based on the published curriculum and the fourth session included an expert guest speaker. Additional readings were selected and a set of four assignments were developed by the instructor to allow students to explore the topic more deeply.

Outcomes:
An analysis of students' evaluations and assignments indicated that they found the structural competency approach useful in thinking about how the health system can be transformed in the longer term while recognizing strategies to help patients deal with the effects of structures now.

Innovation's strengths and limitations:
The adaptation creatively leveraged a high-quality extant curriculum. A limitation was time.

Feasibility and transferability for adoption:
This would fit nicely in a health justice curriculum at other schools.

References:
1. Neff J, Holmes SM, Knight KR, Strong S, Thompson-Lastad A, McGuinness C, Duncan L, Saxena N, Harvey MJ, Langford A, Carey-Simms KL. Structural Competency: Curriculum for Medical Students, Residents, and Interprofessional Teams on the Structural Factors That Produce Health Disparities. MedEdPORTAL. 2020 Mar 13;16.
2. Metzl JM, Hansen H. Structural competency: Theorizing a new medical engagement with stigma and inequality. Social science & medicine. 2014 Feb 1;103:126-33.

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Blended learning in the virtual environment: Interactive sessions for preclinical biochemistry that support student learning and engagement.

Submission Type: Innovation Abstract
Accepted as: Oral Presentation
Region: WGEA

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Abstract Body:

Objective or purpose of innovation:
In response to the requirement for virtual learning amidst the pandemic, we adapted our instructional format for Applied Biochemistry with emphasis on maintaining student engagement, fostering a sense of class community, and ensuring that key learning outcomes were attained despite a modified course format.

Background and/or theoretical framework and importance to the field:
At Stanford University, preclinical biochemistry is taught in a blended-learning format using short instructional videos to impart curricular content, with in-class time devoted to interactive exercises that reinforce integration of concepts and their clinical applications. In these weekly sessions, students work in teams of six to solve clinical problems based on that week's videos. Students have approached these popular in-person sessions with lively enthusiasm and engagement.

Design: Instructional methods and materials used:
In translating to a virtual environment, we focused on elements that support student engagement including appropriate level and pacing of material, clear instructions, anticipation of questions and pitfalls, and rigorous rehearsals of technical steps. We applied this strategy to the weekly interactive sessions as well as a more complex, cumulative review at the end of the course.

Outcomes:
In this virtual setting, students performed as well as previous iterations of the class as measured by final exam scores and overall class performance. Student satisfaction for the course was very high as noted by their course evaluations.

Innovation's strengths and limitations:
For the final cumulative session, we developed a highly interactive virtual platform where early preclinical students could reason through clinical cases by ordering tests, consulting instructors, and making diagnoses in a simulated environment that deepened biochemical understanding and approached clinical reasoning necessary for USMLE step 1 and clerkship preparation.

Feasibility and transferability for adoption:
This platform can be shared and is ready for use in clinical biochemistry courses. It can be iteratively expanded to include more patient presentations and the appearance can be modified. We also expect that other clinical reasoning vignettes could be adapted to this platform.

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 Aug 10;22(8):e16504. doi: 10.2196/16504. PMID: 32773378; PMCID: PMC7445617.

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Pause before implementing: Lessons learned from a pilot microaggression simulation curriculum

Submission Type: Innovation Abstract
Accepted as: Oral Presentation
Region: WGEA

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Abstract Body:
Objective or purpose of innovation:
Develop and implement a simulation curriculum for residents to practice skills in recognizing and addressing microaggressions.

Background and/or theoretical framework and importance to the field:
Residency programs are increasingly incorporating Diversity, Equity, and Inclusion concepts into their curricula to ensure residents contribute to an inclusive learning environment and apply equity principles to patient care. Despite these efforts, many residents report lack of confidence and skills in recognizing and addressing microaggressions.
Design: Instructional methods and materials used:
We developed a simulation workshop for residents to practice interrupting microaggressions delivered by trained actors. We based simulation cases on incidents residents had witnessed from attending physicians, nurses, and peers. Participating residents practiced acknowledging and addressing microaggressions, and subsequently received feedback from facilitators and peers about their approach.
Outcomes:
After participating in the workshop, 27/30 (90%) pediatric residents felt confident in their ability to intervene when a microaggression occurs versus 8/30 (27%) prior to the workshop. All participants strongly agreed that this type of training should be incorporated in their curriculum. In addition to this positive feedback, some learners indicated feeling triggered and traumatized during the scenarios, in part because of their prior experiences with microaggressions in the learning environment.
Innovation's strengths and limitations:
Further discussion with facilitators revealed that learners may not be the best initial target audience for this curriculum as they have limited situational power and reserve. We also learned that facilitators required expert skills to navigate the complicated, sensitive conversations that occurred during the debriefing.
Feasibility and transferability for adoption:
Our experience with this simulation pilot serves as a cautionary tale for other programs/institutions planning similar curriculums. We plan to adapt our resident curriculum into a curriculum for faculty, before re-introducing it to residents. We have two aims for this effort: to equip faculty with the skills to interrupt and address microaggressions so they can be the primary change agents to improve inclusivity in learning environments, and to prepare faculty for the facilitator role.
References:
N/A

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The Power of Active Learning: MS3 Clerkship Support via Student Directed Supplemental Instruction Sessions

Submission Type: Innovation Abstract
Accepted as: Oral Presentation
Region: WGEA

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Abstract Body:

Objective or purpose of innovation:
To provide additional academic support resources to clerkship students.

Background and/or theoretical framework and importance to the field:
Academic resources are established for pre-clinical medical school years; however, there is a decline in support structures for the clerkship year. To address this, we implemented adjunct student directed sessions for each clerkship rotation. This system has proven to be effective in addressing pre-clinical curriculum when geared towards active learning rather than traditional didactic lectures. The success of the pre-clinical modules prompted us to explore its efficacy in providing support for third year students.

Design: Instructional methods and materials used:
One-to-two-hour sessions were provided at a six-week interval for each clerkship cohort (approximately 12-25 students) at UNR School of Medicine. Sessions were run by appointed fourth year students assigned to each clerkship, working in conjunction with clerkship directors and faculty to develop content. Content varied by clerkship, including shelf exam preparation, success tips for the clerkship, oral exam preparation, and career advising. Attendance was optional and recorded; it was then correlated to shelf exam performance. Student surveys were tracked to assess program efficacy.

Outcomes:
Students were very receptive to this resource, with session attendance percentage ranging from 65-100%. When evaluating survey responses, the majority of students report the sessions being helpful in preparing them for their exams and clerkship activities. Shelf exam score data is still being collected.

Innovation's strengths and limitations:
The program allows for students to direct the learning process with facilitators that have just recently completed the curriculum. It allows for the transmission of high yield content that is directly applicable to current students. The success of these modules is highly dependent on finding capable facilitators, making recruitment and training essential.

Feasibility and transferability for adoption:
As ever clerkship employed their modules differently, it can be safely stated that the addition of supplemental instruction modules can be implemented regardless of program structure. Sessions were conducted at various times, locations, and dates without any difficulty.

References:

1. Pelley, John and Dalley, Bernell. (2008). Success Types in Medical Education: A Program for Improving Academic Performance (Version 1.1). Lubbock, TX: Texas Tech University Health Sciences Center School of Medicine. Retrieved fromeducation/success-types/book.aspx

2. Pelley, John. (2018). Success Types Medical Education Site. Retrieved from https://www.ttuhsc.edu/medicine/medical-education/success-types/
3. National Board of Medical Examiners Professional Services, Test Development Services. (2016). Constructing Written Test Questions for Basic and Clinical Sciences. Philadelphia, PA: National Board of Medical Examiners.

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Qualitative Research for Narrative Medicine: Teaching New Perspectives at the Intersection of Social Science, Humanities and Biomedicine

Submission Type: Innovation Abstract
Accepted as: Oral Presentation
Region: WGEA

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Abstract Body:

Objective or purpose of innovation:
This course was developed for the MS in Narrative Medicine that launched in 2020 at the Keck School of Medicine. The purpose of the course is to examine how qualitative research can complement narrative medicine's focus on exploring intersubjectivity, relationality, personhood, and embodiment in relationship to social justice issues in medicine and society.

Background and/or theoretical framework and importance to the field:
Narrative-based, inductive approaches that include sitting with, querying, and reflecting upon the lived experiences of people in naturalistic settings are the hallmarks of qualitative research (1-2). This resonates with concerns addressed in the humanities, such as the human condition and the relationship of individuals to society. Since narrative medicine sits at the intersection of biomedicine, humanities and social science, qualitative research methods serve as an important methodological bridge between these disciplines.

Design: Instructional methods and materials used:
Students learned about ethnography, observation, interviewing, focus groups, and other techniques for acquiring qualitative data to answer research questions. They explored the philosophical underpinnings of qualitative research and the role of worldview and research approach in shaping how epistemologies develop (3). This was related to key concepts from narrative medicine such as the development of narrative competence where health care providers learn to "recognize, absorb, interpret, and be moved to action by the stories of others" (4). Students collected auto-ethnographic data, conducted an interview and observation, and wrote a research proposal.

Outcomes:
The course was evaluated with mid-term and a final course evaluations. Students valued learning systematic techniques for research design and data collection in which they could recognize parallels with quantitative research while appreciating that the more humanistic approach of qualitative research resonated with what they were learning about narrative medicine.

Innovation's strengths and limitations:
Considering social science, humanities and biomedicine together was fruitful. A limitation was that with so much material to cover, we couldn't fully unpack it all.

Feasibility and transferability for adoption:
Could be incorporated in to student research projects.

References:

1. Green, J., & Thorogood, N. (2018). Qualitative methods for health research. Thousand Oaks, CA. SAGE Publications.
2. Maxwell, J. A. (2013). Qualitative research design: An interactive approach. Thousand Oaks, CA: SAGE Publications.
3. Denzin, N. K., & Lincoln, Y. S. (2005). The SAGE handbook of qualitative research. Thousand Oaks, CA: SAGE Publications.

4. Charon, R. (2017). Introduction. In R .Charon et al. (Eds.). Principles and Practice of Narrative Medicine (pp.1). New York: Oxford University Press.

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Assessment of First-Year Medical Students Via a Virtual Clinical Experience During COVID-19

Submission Type: Innovation Abstract
Accepted as: Oral Presentation
Region: WGEA

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Abstract Body:

Objective or purpose of innovation:
Compare ratings on key developmental benchmarks for medical students assessed by longitudinal clinical faculty (CORE) or an alternative faculty educator (ALT) during a virtual clinical experience.

Background and/or theoretical framework and importance to the field:
Experiential learning opportunities (ELOs) are part of our institutional Clinical Method Curriculum—a 4-year learning community (LC)-based clinical skills course. LCs consist of 9 students assigned to one or two longitudinal CORE throughout medical school. COVID-19 precautions mandated a switch from in-person outpatient ELOs to a virtual experience in Spring 2020.

Design: Instructional methods and materials used:
ALT (an experienced physician-educator), other than the student's usual CORE, posed on Zoom as standardized patients (SP) with a common outpatient complaint, and were interviewed and virtually examined by students. These ALT, and the student's CORE, rated students after this experience.

Outcomes:
The majority of first-year medical students (N=103, 82%) were assessed during this virtual experience. There were no statistical differences between ALT and CORE ratings for physical exam, communication, professionalism, or likelihood to struggle during clerkships, but ALT did rate students lower on average across all indices then did CORE. The ability to gather a history was significantly different across raters (5-point scale, 0.2 lower by ALT faculty rater, 3.26 vs. 3.46, p=0.04).

Innovation's strengths and limitations:
ALT posing as an SP were able to reliably assess a student's clinical performance via a single virtual session, with minimal discrepancy in ratings compared to CORE. A limitation was that all raters consistently rated students at or above average on all indices, raising concern that faculty naïve to the virtual ELO setting may need additional faculty development to accurately assess students performing below average in the virtual environment.

Feasibility and transferability for adoption:
Virtual ELOs were feasible, easy to run encounters and may be considered as an alternative to clinical in-person experiences in special circumstances. Virtual experiences allow for students to be reliably observed and assessed by a wide variety of experienced faculty raters.

References:

1. Carraccio, C., Englander, R., Gilhooly, J., Mink, R., Hofkosh, D., Barone, M. A., & Holmboe, E. S. (2017). Building a Framework of Entrustable Professional Activities, Supported by Competencies and Milestones, to Bridge the Educational Continuum. Acad Med, 92(3), 324-330.
2. Tabatabai, S. (2020). COVID-19 impact and virtual medical education. J Adv Med Educ Prof, 8(3), 140-143.

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Integrating Acceptance and Commitment Training into a Medical School Curriculum to Foster Cultural Humility

Submission Type: Innovation Abstract
Accepted as: Poster
Region: WGEA

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Abstract Body:

Objective or purpose of innovation:
To teach cultural humility using Acceptance and Commitment Training (ACT), an evidence-based strategy to mitigate bias.

Background and/or theoretical framework and importance to the field:
Given our nation's salient history of healthcare disparities and the physician's oath to providing equitable care, it is imperative medical schools identify effective training procedures in order to shape the cultural humility of physicians of the future. This need is highlighted by research on healthcare disparities. The Institute of Medicine (2003) found evidence of poorer quality of care for minority patients in many areas.

Design: Instructional methods and materials used:
Interactive online training modules were developed by a team of interdisciplinary curriculum developers and senior medical students to teach medical students how to understand and apply cultural humility by utilizing principles of ACT. ACT is a behavior scientific technology shown to be effective in a variety of areas including efforts to reduce provider stigma (Masuda et al., 2007) and includes skills related to cultural humility such as mindfulness, perspective taking, and values-based actions. By employing these skills, ACT may strengthen the impact of interventions with the goal of increasing cultural humility. The current modules will be provided within the context of a 4th year Medical Spanish elective in conjunction with other material related to the topic of medical Spanish. Pre and post data will be compared on students' self-efficacy and knowledge about cultural humility.

Outcomes:
ACT may strengthen the impact of interventions with the goal of increasing cultural humility.

Innovation's strengths and limitations:
Strengths include use of ACT, an evidence-based approach, to teach skills related to cultural humility, using interactive online modules that are feasible and easy to transfer to other schools. Limitations include lack of a control group to compare learning gains. However, this project will set the course for future multi-site comparisons.

Feasibility and transferability for adoption:
The online modules are easy to implement and can be easily transferrable to other medical institutions.

References:
1. Institute of Medicine (US) Committee on Understanding and Eliminating Racial and Ethnic Disparities in Health Care, Smedley, B. D., Stith, A. Y., & Nelson, A. R. (Eds.). (2003). Unequal Treatment: Confronting Racial and Ethnic Disparities in Health Care. National Academies Press (US).
2. Masuda, A., Hayes, S. C., Fletcher, L. B., Seignourel, P. J., Bunting, K., Herbst, S. A., Twohig, M. P., & Lillis, J. (2007). Impact of acceptance and commitment therapy versus education on stigma toward people with psychological disorders. Behaviour Research and Therapy, 45(11), 2764–2772.

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Pediatric Resident Insulin Management Education (PRIME); A Shift to Adult Learning

Submission Type: Innovation Abstract
Accepted as: Poster
Region: WGEA

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Jenise Wong, University of California, San Francisco
Abby Walch, University of California San Francisco

Abstract Body:

Objective or purpose of innovation:
To improve insulin management self-efficacy in physicians entering pediatric residency.

Background and/or theoretical framework and importance to the field:
Insulin is a high-risk medication, and errors can lead to patient morbidity and mortality.1 Additionally, the American Board of Pediatrics (ABP) recommends that all board certified pediatricians be able to develop an insulin management plan for patients with diabetes.2 Pediatric residents at University of California, San Francisco (UCSF) historically received mandatory didactic teaching on insulin management but endorsed low self-efficacy at developing a new subcutaneous insulin plan. We therefore developed an insulin curriculum with an active learning focus to improve resident skills in devising subcutaneous insulin plans.

Design: Instructional methods and materials used:
Following Kern's model for curriculum development,3 we determined our learner's needs, developed objectives, and chose educational strategies. Using the Master Adaptive Learning framework, we supplemented a short didactic session with small group problem-based learning and peer teaching to promote active learning and participation.4 Pre- and Post-Test responses were compared using paired t-tests and were compared to the previous year's responses.

Outcomes:
Twenty-eight incoming pediatric residents participated in this mandatory course. The primary outcome was self-efficacy; an individual's confidence in their ability to perform a specific task in a given domain. There was a statistically significant improvement in self efficacy at creating a new subcutaneous insulin plan after course completion ($p<0.001$). Post-test self-efficacy scores were higher in this cohort compared to the previous year ($p<0.001$).

Innovation's strengths and limitations:
Integration of active learning methods into an existing curriculum allowed for improved self-efficacy in a pediatric residency insulin curriculum.

Feasibility and transferability for adoption:
Despite being a single institution study of a specific insulin curriculum, these techniques can be easily transferred to other settings and curricula.

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Teaching LGBTQIA+ Health through Activist History and Structural Intervention

Submission Type: Innovation Abstract
Accepted as: Poster
Region: WGEA

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Abstract Body:

Objective or purpose of innovation:
Create innovative methods to engage medical students in the study of LGBTQIA+ health and identity.

Background and/or theoretical framework and importance to the field:
Published curricula focus primarily on risk factors, pathologies, and "LGBTQIA+ 101" topics. Few employ cultural or structural humility frameworks and none, to our knowledge, engage with the health impacts of intersectional LGBTQIA+ histories of structural violence and activism.

Design: Instructional methods and materials used:
We designed a new small group-based curriculum for medical students during a required social justice-focused preclinical course employing transformative learning pedagogy. Student pre-work includes a reading on improving LGBTQIA+ healthcare and preparing group presentations on predetermined LGBTQIA+ activism and health history topics. During the session, students present and discuss their topics. They then read a case of a transgender man with a pelvic mass and use their pre-reading to imagine different levels of intervention to improve his care.

Outcomes:
The curriculum was piloted in November 2020 and evaluations were overwhelmingly favorable. Ninety-seven percent of students completing the post-session survey (n=40) agreed that the content was valuable to their medical education. Qualitative responses indicated gratitude for a nuanced approach to LGBTQIA+ health and diverse intersectional identities that students had not experienced elsewhere. In particular, students were excited to see a patient case that is "finally representative of the lived experiences of many trans folks." Students also expressed a desire for more transgender and gender non-conforming health inclusion in their preclinical curriculum beyond this small group.

Innovation's strengths and limitations:
The curriculum successfully approaches LGBTQIA+ health from a new perspective focusing on activist history and structural intervention. Improvements are needed in timing, as the lesson plan was challenging to complete in the time allotted, and to more directly connect LGBTQIA+ histories to their current healthcare impacts.

Feasibility and transferability for adoption:
This session occurs during a required social justice-focused course, without which it may be difficult to contextualize. However, it is designed to be effective as a standalone session.

References:

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Using Virtual Reality (VR) for Teaching Neuroanatomy

Submission Type: Innovation Abstract
Accepted as: Poster
Region: WGEA

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Abstract Body:

Objective or purpose of innovation:
Our project aims to represent MRI data in 3D form to help residents study neuroanatomy through immersive visualization. Developed with the goal of having psychiatry residents immerse inside a virtual environment, MRI data was used to represent the human brain as a complete structure in 3D space.

Background and/or theoretical framework and importance to the field:
Traditionally, radiologists and neurology students analyze MRI data only by looking at flat 2D DICOM slices. It is hard to visualize how structures really look. To understand better, it is important to recognize how a structure is spatially constructed and oriented. With the addition of the 3rd dimension, a series of MRIs can become a volumetric visual that is accurate and faithful to its 2D counterpart.

Design: Instructional methods and materials used:
To re-create MRI data in its volumetric form, we extracted actual MRI data, and reconstructed it in Unreal Engine 4 by using raymarching technique. Learners are immersed in a virtual environment (VR). Inside, they see the actual MRI data, represented as a volumetric form. Using either HTC Vive or Oculus Rift headsets, learners have abilities to manipulate the simulation in a 3D space. A quiz is embedded with randomly generated questions to assess their skill level.

Outcomes:
With the help of volumetric MRI visualization, this innovative educational intervention will not only be the first application of VR in neuroimaging education among psychiatry residents, but also be the first to study the impact of VR technology in learning behavioral neuroimaging concepts .

Innovation's strengths and limitations:
This project engages students in an innovative learning modality, and represents anatomical MRI data in a complete volumetric form. It, however, takes time to reconstruct the data accurately. Importing data into the engine is also not automated yet.

Feasibility and transferability for adoption:
This project can be adapted easily with new sets of MRI image data. The curriculum can be converted into a CME course and expanded to include other medical specialties.

References:
N/A

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Development of Cultural Humility through a Medical Spanish Elective

Submission Type: Innovation Abstract
Accepted as: Poster
Region: WGEA

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Abstract Body:

Objective or purpose of innovation:
MED 663-Spanish for Medical Professionals is a fourth-year medical school elective designed to alleviate health disparities by teaching medical students the fundamentals of medical Spanish and cultural humility in order to help underserved populations.

Background and/or theoretical framework and importance to the field:
Nationally, 64% of non-English speaking patients speak Spanish, resulting in increased health disparities because most physicians in the US primarily speak English. In Washoe County the need for medical providers to speak Spanish is needed, given that the Latinx community comprises 25% of the census population. In the context of the current pandemic, the Latinx community comprises 36% of COVID-19 cases in Washoe County. A lack of well-trained in-person interpreters and culturally humble healthcare teams has magnified the critical need for providers being able to communicate to patients using medical Spanish, not only to decrease the spread of COVID-19 - but also to ensure each patient is receiving just, equitable, and culturally-sensitive care.

Design: Instructional methods and materials used:
This course is divided into three components, which consist of (1) language acquisition via the Canopy online learning platform, (2) cultural humility via online modules and interactive workshops, and (3) practicum, where students have the opportunity to practice their medical Spanish in a clinic setting.

Outcomes:
Demand for the course was overwhelming as all available seats were filled within minutes. Upon successful completion of this course, students will improve their fluency in Spanish and obtain the resources necessary to facilitate and further improve their communication. Furthermore, students will learn about culture in the context of healthcare and develop their own approach to treating diverse patients

Innovation's strengths and limitations:
Early implementation of this course can be difficult due to the cost, gathering support from stakeholders, and educational materials.

Feasibility and transferability for adoption:
However once established, it will provide an easy, generalizable model for other schools to adopt and meet needs of their specific regional demographics.

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Medical Education Media Enlivened with Character Animator

Submission Type: Innovation Abstract
Accepted as: Poster
Region: WGEA

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Abstract Body:

Objective or purpose of innovation:
After attending this presentation, participants will be able to promote active engagement with medical education content through the art of storytelling and the application, Character Animator.

Background and/or theoretical framework and importance to the field:
Today's creative technologies make storytelling and content production accessible, elevating the way we tell medical stories for learning. Animation, often used to explain medical information, dynamically demonstrates technical content, while character animation, often used in role play or simulations, engages learners on an emotional level, enhancing learning [1]. Character Animator, a character animation app by Adobe, is the perfect tool for bringing impactful medical stories to life.

Design: Instructional methods and materials used:
Stanford Edtech uses Character Animator to create learning content where patient and physician stories are central. To use Character Animator, all one needs is a desktop or laptop computer with a webcam. External files, like character rigs created in Photoshop, or jpegs can be brought in as puppets to animate.

Outcomes:
Character Animator continues to be a go-to tool for producing the types of projects our stakeholders appreciate. It makes it possible to take on projects that would be impossible otherwise due to either COVID limitations on live filming, or because live filming requires greater resources. Production time has decreased, with experience.

Innovation's strengths and limitations:
When live action filming is a challenge, character animation can be an effective alternative. Personas, built as character rigs or characterized images, can protect patient identity or liven up a didactic scenario. Adobe's AI uses webcam and facial tracking to match expressions in real time, turning any artwork into an animated character. The primary limitation is the time necessary to learn Character Animator.

Feasibility and transferability for adoption:
Adobe's creative cloud service allows for project files to be shared efficiently within a creative team and files can be exported as HD image sequences or video. View an example of our work here: https://www.youtube.com/watch?v=Ryzs9JAlEM8&ab_channel=StanfordEdTech

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A creative teaching modality to not only help students learn anatomy but also practice visual communication skills for future interaction with patients.

Submission Type: Innovation Abstract
Accepted as: Poster
Region: WGEA

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Abstract Body:

Objective or purpose of innovation:
Introducing a new creative modality to anatomy learning could help students learn anatomy and practice visual communication.

Background and/or theoretical framework and importance to the field:
Cadaveric dissection has remained the primary modality for anatomy education for several hundred years. However, it has been suggested that combining this teaching practice with more modern approaches could complement the students' learning experience.[1] Beginning in 2020, UC San Diego School of Medicine provided all preclinical students with iPads to provide new opportunities for creative teaching modalities.

Design: Instructional methods and materials used:
The authors generated a series of template images in the Procreate app from existing anatomy lab manuals. Template images were not labeled and omitted key structures. These images were imported into the Notability app and relevant structures were drawn to serve as an example. Duplicate version sans annotations were made available for students to draw the missing structures and label appropriately.

Outcomes:
The authors surveyed the class after students used this new modality. Out of 25 respondents, 19 (76%) used the templates for anatomy once a week or more. Participants reported that they used the templates for problem-based learning presentations (5.5%), non-anatomy coursework (16.7%), and as a basis for flashcard software (11.1%). Students reported that the templates are helpful for knowledge integration and for test preparation. Thus, with this resource, visual anatomy learning has become more accessible and shareable for all learners.

Innovation's strengths and limitations:
Given the changing climate with respect to distance learning, efforts should be made to bolster alternate resources.[2] Incorporating creative modalities in anatomy learning may foster creativity in students' future careers and help students recognize the benefit of visuals in communicating medicine to patients. Although this exact methodology may not be possible for all institutions, the idea holds that artistic learning modalities are useful to students.

Feasibility and transferability for adoption:
This visual communication could be an invaluable and transferable skill in interacting with patients in the long term.

References:
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Effectiveness of a Medical Student Led Virtual Nutrition Module for High School Students

Submission Type: Innovation Abstract
Accepted as: Poster
Region: WGEA

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Abstract Body:

Objective or purpose of innovation:
The Healthier Nevada Youth Educational Modules Project (HNVP) was designed by medical students and aims to provide evidence-based preventative health education to high school students. This study focuses on the effectiveness of presenting a virtual nutrition module to high school students during the COVID-19 pandemic.

Background and/or theoretical framework and importance to the field:
The Nevada Youth Risk Behavior Survey (YRBS) assessment_1 analyzed diet trends among high school students in Washoe County, NV and demonstrated that only 12.8% of students consumed vegetables at least once per day, and 11.2% of students drank soda daily. This prompted the HNVP to create a nutrition module that focuses on decreasing sugar and increasing whole food consumption.

Design: Instructional methods and materials used:
To continue our efforts despite the COVID-19 pandemic, we adapted our nutrition module for online delivery. Before and after the module students will complete a Likert scale survey that pertains to what they learned about proper diet and nutrition and their overall satisfaction with the online format.

Outcomes:
Data will be collected from December 2020-April 2021, and will be analyzed to see if students are receptive to nutrition education delivered by medical students. Further results will be analyzed to see if students responded well to the online format.

Innovation's strengths and limitations:
We are limited by the self-reporting nature of data collection and the variability in the delivery of modules when given by different medical student presenters. Successful transition from in-person modules to online has allowed us to continue providing essential nutrition information to students despite COVID19 restrictions. We aim to continue exploring the effectiveness of this module while also transitioning other modules to an online format.

Feasibility and transferability for adoption:
Online modules will help broaden access to public health curriculum in harder to reach populations such as homeschooled or rural students. Overall, creating engaging online content centered around sensitive health topics could provide a great opportunity for medical students to effect change across Nevada.

References:

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Addressing a Citation on Biochemistry from the Liaison Committee on Medical Education: The John A. Burns School of Medicine's Approach

Submission Type: Innovation Abstract
Accepted as: Poster
Region: WGEA

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Abstract Body:

Objective or purpose of innovation:
To address a Liaison Committee on Medical Education (LCME) citation, our aims were to understand student perception and content relevance, develop faculty development and new curricular activities, and measure effectiveness.

Background and/or theoretical framework and importance to the field:
In 2017, the John A. Burns School of Medicine (JABSOM) received a LCME citation for Element 7.1 on student dissatisfaction with preparation for clinical clerkships in biochemistry. The associated AAMC-GQ biochemistry ratings for excellent/good was 41.0-47.5% for 2015-2017, below national average.

Design: Instructional methods and materials used:
The Classes of 2017-2019 were engaged to understand student perception. Faculty development included presentations on learners and active learning methods, direct lecturer observation by experienced teachers, and NBME subject exam review. Clerkship directors' ratings of relevance of biochemistry content1 were incorporated into a longitudinal map. End-clerkship surveys asked students which topics should be covered in pre-clerkship to better prepare for clerkship. From this, new educational content was developed and monitored.

Outcomes:
Students felt biochemistry was less relevant to clerkships; PBL cases could incorporate more biochemistry; lectures had too much information, unclear clinical relevance and needed step-by-step pathways and more interactivity. The latter two were addressed by faculty development. The longitudinal content map identified gaps. Biochemistry content was added to PBL. Pre-lecture step-by-step pathway videos, allowed for more lecture coverage of clinical relevance and board review. Upperclassmen were informed of the pre-clerkship changes and ~85% agreed/strongly agreed that they would have been better prepared for clerkship. This was reflected in AAMC-GQ biochemistry ratings of 71.0-78.0% in 2018-2020, above national average.

Innovation's strengths and limitations:
JABSOM successfully developed and implemented initiatives that improved instruction and clinical relevance of the biochemistry curriculum. The students were appreciative of these changes, and this process reviews 2-3 foundational sciences per year. However, since our main changes were implemented for MS1s, these classes have not yet graduated.

Feasibility and transferability for adoption:
The design is feasible and transferable, with unique outcomes based on information gathered.

References:

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Character-Driven Storytelling in Medical Education: an essential approach to teaching health

Submission Type: Innovation Abstract
Accepted as: Poster
Region: WGEA

Authors:
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Abstract Body:

Objective or purpose of innovation:
We create character-driven storytelling content in order to teach communication, soft skills, and bedside manner online, in an emotionally compelling and memorable way.

Background and/or theoretical framework and importance to the field:
Across our projects, bedside manner, empathy, and communication skills have been consistent learning objectives. To meet this recurring need, our team has developed a design methodology, content production pipeline, and skillset to create character-driven storytelling education content.

Design: Instructional methods and materials used:
When developing projects we help our partners reframe their content to put character stories, ideally from real life, at the center. Those stories frame how the content is taught and then our team comes up with a way to represent the story. We have a range of approaches which we will often use in combination, from prose-style narrative writing, to graphic novels, to fully animated sequences using complex digital puppets.

Outcomes:
The outcome I would like to highlight is the qualitative feedback we've received, often unsolicited, about the impact of the stories in our courses. In one case, "Childrens Health Across the Gender Spectrum," we invited eight transgender children to teach the course using their own voices and experiences, and we had such a positive reception to the course that a translator volunteered to translate the entire course into Spanish and Italian for us.

Innovation's strengths and limitations:
One strength of character-driven storytelling is its synergy with diversity, equity, and inclusion efforts. Storytelling naturally prompts discussion of whose stories we're telling, and how we might better address the needs of specific populations who are adversely affected by a particular issue.

One limitation is cost; conceiving of, planning, creating this content requires a lot of time, money, the right skills, and a certain level of talent.

Feasibility and transferability for adoption:
This is a highly transferable innovation in medical education because storytelling is a universal communication strategy that can be scaled to the resources and needs of any team.

References:
N/A

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A data-driven and evidence based approach to hybrid UME curriculum

Submission Type: Innovation Abstract
Accepted as: Poster
Region: WGEA

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Abstract Body:

Objective or purpose of innovation:
A data-driven approach to student engagement in virtual learning is necessary to understand the learning equity of the program.

Background and/or theoretical framework and importance to the field:
While some have posited UME preclerkship can be offered online, creating quality learning experiences for equitable outcomes is challenging. We used a design-based research framework to better understand the interaction between curriculum design and student behaviors.

Design: Instructional methods and materials used:
Dashboards (Power BI; Microsoft Corporation, Seattle, WA) compared preclerkship hybrid learning behaviors over three years, including before and during the pandemic. Data included logins, content accessed, duration, and time of day. Curriculum design iterated over class years from in-person large group teaching, to some online modules, to fully evidence-based Zoom active learning twice a day with recordings and live small groups. Student feedback was triangulated with dashboard results and analyzed by two reviewers using a prior themes of access and engagement.

Outcomes:
Pre-COVID access to resources showed the same patterns as the March 2020 pivot online; i.e. learners accessed materials afternoons and evenings, but did not engage lecture. During the pandemic, learner engagement shifted to attending active and team learning sessions, and the number of downloads decreased, though did not account for all student access to learning materials. Student feedback was that mid- and higher socioeconomic class students rely on 3rd party tools rather than university-supplied materials, noting that students with fewer economic means use fewer third party tools and higher stress in preparing for exams.

Innovation's strengths and limitations:
Dashboards provide key insights into the complex interactions of curricula and student behaviors. However, visualizations alone will not improve equity in academic success. AAMC-wide, we need to mature the data sources for dashboards, both within and across institutions.

Feasibility and transferability for adoption:
Shifting medical school online requires a conscientious understanding of student-driven behaviors and evidence-based needs. This is particularly true for medical schools supporting first-to-college matriculants who need additional learning support.

References:

1.Knosp, B., Patton, J., Campion, M., Macfarlane, H. and Corral, J. (2018). "What's In Your Med Ed Data Warehouse?". In S.Th. Konstantinidis, P.D. Bamidis, N. Zary. (Eds.) Digital innovations in healthcare education and training. Cambridge, MA : Academic Press
2.Boscardin, C., Fergus, K. B., Hellevig, B., & Hauer, K. E. (2018). Twelve tips to promote successful development of a learner performance dashboard within a medical education program. Medical teacher, 40(8), 855-861.
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Design Thinking-Based Resident-Led Curriculum Development During Covid-19: Feasible, Fast, Effective

Submission Type: Innovation Abstract
Accepted as: Poster
Region: WGEA

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Abstract Body:

Objective or purpose of innovation:
To investigate whether design thinking-based, resident-led online curriculum could result in effective learning.

Background and/or theoretical framework and importance to the field:
In March 2020, our Department of Anesthesia suspended residency didactics in the setting of a global pandemic. We created an online course employing design thinking with Kern's six-step approach to curriculum development.

Design: Instructional methods and materials used:

1. Empathized, defined and targeted needs assessment.
    a. Through polling during departmental town hall meetings and Slack channels residents expressed a desire to continue structured learning. A PollEverywhere survey served as a targeted needs assessment for didactics topics. Of 25 polled residents, 6 residents requested basic pharmacology review, 9 residents requested cardiac anesthesia, 3 resident requested thoracic anesthesia, 3 residents requested liver transplant topics, 2 residents requested review of blood products and transfusion, medicine, 2 residents requested Covid-19 topics, 1 resident requested pediatric anesthesia, 1 resident requested OB anesthesia. No residents requested acute or chronic pain topics.
2. Goals, educational strategies, and ideation.
    a. With an objective to provide residents the opportunity to review advanced topics in anesthesia, we employed flipped classroom strategies with suggested pre-reading for sessions and leaned heavily on polling features.
3. Implementation, prototyping, testing.

We refined teaching strategies based on resident feedback and attendance.

Outcomes:

- On average, 15 (6-16) residents attended each session.
- Of 16 residents, 11 residents provided feedback (69%).
- 5 residents agreed "the course significantly contributed to my understanding of a topic in education."
- 6 residents agreed it "somewhat contributed to my understanding of a topic in education."
- 11 residents agreed it was "fairly engaging;" no residents indicated that the course was not at all engaging, somewhat engaging, or extremely engaging.

Innovation's strengths and limitations:
We created a rapidly developed, effective curriculum. Limitations include the small cohort size.

Feasibility and transferability for adoption:
Design thinking and Kern's six steps to curricular development are both validated, well-described in the creation of health education. Combining them is feasible and transferable.

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Research Abstracts

Neural Network Analysis of Medical Student Burnout as Impacted by Emotion

Submission Type: Research Abstract
Accepted as: Oral Presentation
Region: CGEA

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Abstract Body:

Research Statement/Research Question:
The purpose of this study is to determine the predictive relationship of medical student burnout from trait-affect using neural network analysis.

Background and relevance of the study:
Neural network analysis (NNA) is a powerful analytical tool modelled after the structure of the human brain. It can generate more predictive power over regression analysis to identify risk factors for important outcomes such as medical student burnout.[1] Given the implications of medical student burnout and its association with depression, loneliness, and depersonalization,[2] it is necessary to identify emotional predictors that may influence this phenomenon.[3]

Design and Methods:
In 2017/18, 205 of 500 first and second-year medical students completed these self-reported surveys: 15-Item Maslach Burnout Inventory (MBI-SS, scale:1=never/7=every day) and 60-Item Positive and Negative Affect Schedule (PANAS-X, scale:1=very slightly/5=extremely) to measure trait affect (emotions).

Multilayer perceptron analysis (a specific form of NNA) generated predictive models of burnout from trait affect (TA). Multivariate logistic regressions were used for comparison to multilayer perceptron analysis. IBM® SPSS® 26.0 generated the statistical analysis. This research was approved by the institution's IRB.

Results:
Medical student burnout (alpha=0.7) scores (mean(sd)=52(15)) had a range of 18-85 and dichotomized as high/low along the median (53).

NNA of burnout/TA completed training time in 30 milliseconds and used 70%/30% of the data for training/testing with an 78% successful testing prediction rate. Area under the ROC burnout/TA high/low curves were 0.860/0.860.

The top six TA predictors of burnout were fatigue (importance coefficient=0.17), fear (0.16), serenity (0.14), attentiveness (0.13), joviality (0.11), surprise (0.10).

Multivariate logistic regression of burnout and TA (Nagelkerke R^2=0.49, $p<0.001$) had three significant TA predictors: attentiveness (B coefficient=-1.3), fear (1.1), and fatigue (0.5) with a 78% successful classification rate.

Conclusions:
Neural network analysis provided a more comprehensive list of emotional risk factors of burnout than logistic regression analysis, but both techniques included the full spectrum of emotional valence (positive, negative, and neutral).

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Faculty's Perceptions of Culture Conducive to Career Success in Academic Medicine

Submission Type: Research Abstract
Accepted as: Oral Presentation
Region: CGEA

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Abstract Body:

Research Statement/Research Question:
This study aimed to investigate perceptions of faculty members about organizational culture as it relates to their career success in academic medicine.

Background and relevance of the study:
Faculty career success in academic medicine is complex, especially when considering the intersectionality of gender and race.1-3 The elusive nature of processes such as promotion and tenure and selection for leadership positions compounds the question of whether the culture of academic medicine is conducive to faculty development and career progression.

Design and Methods:
We conducted a qualitative study by interviewing twenty-three faculty at a medical school located in the Midwestern United States. We analyzed the interview transcripts using constant comparison processes based on a grounded theory approach to identify the collective perceptions of the faculty about career success.

Results:
Despite a general perception of a collaborative, friendly, and supportive culture, access to resources seemed to be unequal and tied to position. Participants perceived that leadership selectively accommodated individual faculty needs to achieve collective success as an organization rather than focus on the success of particular individuals. Career opportunities were mostly granted by leaders, and interpersonal relationships with leaders could either promote or hinder career advancement. Emphasis on clinical productivity and academic scholarship led to perceived inequities by clinical faculty, with the misalignment creating inconsistent faculty promotion timelines. Gender bias was present, but subtle. Participants also perceived bias between disciplines that contradicted a culture of collaboration, support, and interdisciplinary connection in academic medicine.

Conclusions:
Transparency and consistency in processes, from promotion and tenure to leadership development and selection, are imperative in building an inclusive culture in academic medicine. Career advancement should be individually tailored with equitable allocation of resources. Further, building high-quality relationships between leaders and all faculty and cultivating mutual respect between specialties are essential to create an organizational culture conducive to faculty career success.

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Black Lives Matter: Student Perspectives of Institutional Statements on Racial Incidents Using LCME Standards as a Guide

Submission Type: Research Abstract
Accepted as: Oral Presentation
Region: CGEA

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Abstract Body:

Research Statement/Research Question:
Research Question: What is the connection between LCME Standards and the institutional statements developed as a response to the murder of George Floyd?

Sub-question: What is missing from both the LCME standards and the institutional statements in relation to lived experiences of Black medical students?

Background and relevance of the study:
The murders of Breonna Taylor, George Floyd, Ahmaud Arbery, and countless other Black Americans at the hands of police have triggered introspection across all academic medical centers. As a response, leaders in academic medicine have released statements to address the social injustices recognized by their campus communities. Yet, what else has influenced the language of these statements? Therefore, we consider the role of the Liaison Committee on Medical Education (LCME), and how Standards provide direction to campus leaders for discussing issues around racial injustice in the Black community.

Design and Methods:
Using discourse analysis, we analyzed 26 institutional statements collected through the internet. Statements were issued during the timeframe of May 25th to June 9th. Further, we focused our analysis on institutional statements provided by Deans and CDOs in academic medicine.

Results:
The analysis revealed three discursive themes related to relevant LCME Standards. Theme one considers LCME Standard 2.5 and illustrates how the language used to convey the responsibility of the dean often centers whiteness. The two additional themes focus on both LCME Standards 3.4 and 7.6 and highlights redoubled efforts that lead to vagueness perpetuated by LCME, as well as the use of platitudes when addressing racism.

Conclusions:
There is no statement released from a Medical School that can change the dynamics of our society, or no words that can bring back George Floyd and Breonna Taylor. Many mentioned the importance of taking a stance on condemning racism as a whole. The statements that truly stood out were statements that addressed the emotions of those that are being oppressed.

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Evaluation of a Bilingual Cultural Hispanic/Latinx Workshop About Diabetes for Pre-health and Health Professions Students

Submission Type: Research Abstract
Accepted as: Oral Presentation
Region: CGEA

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Abstract Body:

Research Statement/Research Question:
To evaluate the impact of a bilingual cultural health workshop about diabetes on pre-health and health professions students' confidence in and attitudes about caring for Hispanic/Latinx patients with diabetes.

Background and relevance of the study:
Patient-physician linguistic and cultural discordance contributes to suboptimal care of Hispanic/Latinx individuals with diabetes in the United States (1-5). Medical education presents an important opportunity to increase future physicians' awareness of Hispanic/Latinx cultural health beliefs, celebrate the linguistic and cultural diversity of the Hispanic/Latinx community, and invest in reinforcing the unique skills of Hispanic/Latinx students and health professionals. Bilingual pedagogies have been proposed as effective methods for preparing students with some pre-existing Spanish skills—including Hispanic/Latinx heritage speakers—to be advocates in their communities (6).

Design and Methods:
The 1-hour workshop consisted of an interactive didactic and bilingual slide presentation to introduce participants to common Hispanic/Latinx cultural beliefs pertaining to diabetes, diabetes terminology in Spanish, and best practices when caring for Spanish-speaking patients with a high risk of diabetes. Two workshops were conducted in partnership with the Medical Organization for Latino Advancement and the Latino Health Science Enrichment program. A four-point Likert scale asked participants to self-rate their confidence with culturally focused diabetes-related topics.

Results:
Of 60 attendees, 51 participants (85%) completed surveys. Comparing pre-and post-workshop responses, showed increases in respondents' confidence to explain the definition of diabetes to Spanish-speaking patients (2.38 vs. 1.47, $p < .001$), to explain how diabetes relates to general health (2.20 vs 1.42 $p < .001$), and an increase in general knowledge of cultural diabetes beliefs and how culture may impact health decisions (2.00 vs 1.27, $p < .001$). The workshop was effective across learners with variable Spanish-proficiencies.

Conclusions:
A culturally-focused diabetes workshop taught bilingually, may be an effective strategy for promoting diversity in medicine and teaching Spanish-heritage learners or second-language learners about culture's integral role in diabetes management in Latinx/Hispanic communities.

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Use of Artificial Intelligence to Map Assessment Alignment in Medical Education

Submission Type: Research Abstract
Accepted as: Oral Presentation
Region: CGEA

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Abstract Body:

Research Statement/Research Question:
Our goal is to evaluate medical school curriculum mapping using artificial intelligence (AI). Specifically, we will use AI to complement standard current examination mapping processes. We aim to assess the value of AI to improve curricular management and data reporting.

Background and relevance of the study:
Curriculum mapping aligns learning objectives, instruction, and assessment; however, it is a time-consuming process. AI supports complex human activities and may become a time-saving innovation to mapping. The potential for big data and machine learning in medical education has been recognized for years. An important extension of curriculum mapping is the linking of learning objectives to exam questions (MCQ). However, none of these approaches are fully automated, and all rely on a decentralized approach. Despite the value of mapping, implementation places a burden on faculty and administrators, which may lead to incomplete and inaccurate maps.

Design and Methods:
MCQ assessment items were manually mapped and aligned with course learning objectives, session learning objectives, and keywords. A rubric was developed to manually score each question indicative of the level of coverage (not, weakly, adequately, or extensively covered). In parallel, items were mapped using AI, with additional mapping and alignment to MeSH terms and the PCRS. The two process outcomes were compared and analyzed.

Results:
Mapping of MCQ assessment items to learning objectives using AI approximates manual question mapping. An AI score of >0.6 indicates extensive coverage of an outcome by an event, and a score between 0.4 to 0.6 reflects good coverage.

Conclusions:
AI can effectively blueprint MCQ assessments in healthcare curricula. AI can 1) decrease workload in aligning learning objectives with assessments, and 2) protect question bank integrity by reducing human participation in the mapping analysis.

We acknowledge funding from the CGEA (Mini-Grant).

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Cognitive Load Assessment Scales in Simulation: Validity Evidence for a Novel Measure of Cognitive Load Types

Submission Type: Research Abstract
Accepted as: Oral Presentation
Region: CGEA

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Abstract Body:

Research Statement/Research Question:
We aimed to develop the novel Cognitive Load Assessment Scales in Simulation (CLAS-Sim) and evaluate validity evidence using Kane's framework.1-3

Background and relevance of the study:
Cognitive load (CL) theory provides a framework to inform simulation instructional design.4-6 Reliable measures of CL types (intrinsic [IL], extraneous [EL], and germane load [GL]) in simulation are lacking.7

Design and Methods:
Twenty-two items for CL types were developed and tested in a quasi-experimental study of pediatric residents' performance in both complex-case and simple-case simulations. Participants were assigned to a segmented/pause-and-debrief arm or standard/end-of-case-debrief arm. Following each simulation, participants completed the CLAS-Sim and Paas total CL scale.8 To support Kane's scoring and generalization inferences, principal component analysis (PCA) served to reduce the number of CLAS-Sim items and examine its underlying factor structure. To support Kane's extrapolation inference, Spearman correlations (rs) tested associations between each CLAS-Sim component and the Paas scale. Analyses of variance (ANOVAs) tested CL-type score differences between high and low performers (median split of primary-task-performance scores). Multivariate ANOVAs tested whether CL-type scores varied across cases by arm.

Results:
Eighty pediatric residents completed both cases. PCA yielded three components: 4-item IL, 4-item EL, and 3-item GL scales (Cronbach's alphas, 0.68-0.77). Significant correlations were observed between Paas scores and CLAS-Sim IL and total CL scores in both simple (IL rs=0.69; total CL rs=0.67) and complex (IL rs=0.46; total CL rs=0.33) cases. In the complex case, high performers reported lower IL, EL, and total CL (ANOVAs each $p<0.05$). In multivariate ANOVAs, CLAS-Sim scores varied by arm across complex and simple cases for IL ($p=0.005$), GL ($p=0.008$), and total CL ($p=0.018$); in both cases, the segmented-debrief arm reported lower IL (each $p\leq0.01$).

Conclusions:
The CLAS-Sim distinguishes three CL types and demonstrates initial validity evidence. The CLAS-Sim has potential for evaluations of the impact of simulation-design elements on CL and learning across the education continuum.

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Becoming a Woman Doctor: Insights from first-year women medical students

Submission Type: Research Abstract
Accepted as: Oral Presentation
Region: CGEA

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Abstract Body:

Research Statement/Research Question:
How do first-year medical students who identify as women see themselves becoming doctors?

Background and relevance of the study:
Students who identify as women now matriculate into medical school at a higher rate than men (Boyle, 2019). Despite their majority in admission and attendance, there remains an ideal norm of what becoming a doctor means—white cisgender men are still more likely to be recognized as doctors. (Haggins, 2020; Ludmerer, 2020). Thus, students who identify as women may face greater challenges in integrating into medical school and experience dissonance as they remain tethered to their own ideals and aspirations of becoming a physician against the cultural norms of doctoring (Balmer, et al., 2020; Griffin, et al., 2015). With gender diversity for students in medical school a very real and present fact, it is increasingly relevant to challenge ideal norms of what "doctoring" means and elevate a more diverse perspective about who can doctor and how medicine can be performed.

Design and Methods:
To answer, we interviewed 38 first-year medical students who identify as women to explore how they understand their role as women performing medicine. A conceptual framework of gendered organizations (Acker, 1990) and sensemaking (Weick, 1995) ground this study.

Results:
Preliminary findings from this study are categorized into the following themes: the meaning of being a leader; the meaning of being caring, and the meaning of being resilient. By performing interviews during the earliest stages of medical school, this study provides insights into both the rationale for becoming doctors and a starting point for how that rationale might change throughout their medical careers.

Conclusions:
These early interviews reveal how the dominant image of a cisgender white male doctor is already being challenged by women during their first year of medical school.

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Trajectories of National Board of Medical Examiners scores in the first year of medical school and its relationship with USMLE Step 1

Submission Type: Research Abstract
Accepted as: Oral Presentation
Region: CGEA

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Abstract Body:

Research Statement/Research Question:
This study aims to identify students' trajectories in NBME test scores in the first year of medical school and find latent group of students with higher risk failing USMLE Step 1.

Background and relevance of the study:
Many previous studies have found that basic science knowledge is strongly associated with students' performance in USMLE Step 1. However, most of these studies employed NBME test score at one time-point to predict Step 1 results without considering NBME test scores longitudinally and developmentally.

Design and Methods:
Growth Mixture Modeling (GMM) is used to examine different trajectories of NBME test scores and its relationship with USMLE Step 1. It is assumed that the latent growth in NBME tests follow linear patterns with different latent intercepts and slopes. The optimal number of latent classes is decided by model fit indices.

Results:
The study sample is 518 students matriculated in 2016-2018 in our medical school and finished USMLE Step 1 at the end of second year medical school. Twenty-six failed Step 1 in their first try. Complete 6 NBME test scores in the first year medical school were used to find latent trajectory patterns. Four latent subgroups were found by GMM: 1) Group 1 (n=77) with estimated starting NBME test score at 33.6 and slope at 2.30; 2) Group 2 (n=256) with starting score at 35.6 and slope at 2.73; 3) Group 3 (n=159) with starting score at 39.8 and slope at 3.59; 4) Group 4 (n=26) with starting score at 48.6 and slope at 3.49. All 26 students failed Step 1 at the end of second year were identified in Group 1 (33.7%).

Conclusions:
Based on trajectories of NBME test scores, medical educators can identify students with higher risk of failing Step 1 in the first year of medical school and provide help in the early stage.

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Educator and Learner Perceptions Regarding Virtual Medical Education during COVID-19

Submission Type: Research Abstract
Accepted as: Oral Presentation
Region: CGEA

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Abstract Body:

Research Statement/Research Question:
Identify the strengths and weaknesses of virtual clinical medical education during COVID-19.

Background and relevance of the study:
At the onset of the COVID-19 pandemic, in-person medical school classes and clinical rotations were cancelled for several months and educators and students found themselves engaged in alternative virtual experiences to meet their learning objectives. While virtual learning is well integrated into modern medical education and has proven effective as a supplement to in-person learning, little is known about completely replacing clinical rotations with online learning. This project sought to evaluate how the transition to virtual education transformed and influenced clinical training for medical students during the COVID-19 pandemic.

Design and Methods:
Surveys were distributed through anonymous links to clerkship directors and clinical medical students and consisted of various multiple choice and open-ended questions evaluating their attitudes toward virtual clerkships. Multiple questions invited suggestions for course improvements and additional resources. Results were categorized based on overarching themes to be shared with school and clerkship administration for curriculum improvement.

Results:
The main challenges identified by students were the loss of clinical experiences and patient and interprofessional interactions. Zoom lectures were deemed inadequate at replacing in-person learning. 70% of students experienced decreased motivation. However, virtual surgical videos with annotations were found helpful, and 84% of students reported spending more quality time with family and friends. 50% of M3s and 20% of M4s were concerned about the impact of shortened clinical rotations on their specialty choice. Clerkship directors believed education, while challenging, continued unhindered despite lacking patient care. Clerkship directors were also concerned students may lack clinical correlation and decision-making skills moving forward.

Conclusions:
The months students spent virtually during the COVID-19 pandemic revealed significant concerns related to practical clinical experiences, future clinical decision making, and specialty choice. Appreciation of this impact should be used to help guide decisions to improve future clinical education.

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Improving Medical Student's Virtual Rounding Experience - A Qualitative Analysis.

Submission Type: Research Abstract
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Region: CGEA

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Abstract Body:

Research Statement/Research Question:
Due to COVID-19-pandemic, AAMC suspended all clinical activities for medical students. Given the novelty of situation, a Virtual Rounding Curriculum was implemented in the pediatric unit. We conducted qualitative research to discover the principles of an effective medical student virtual learning experience.

Background and relevance of the study:
During COVID-19 pandemic, our In-patient-pediatric-unit formulated a Virtual Rounding curriculum for clerkship students, where students can experience clinical immersion virtually via secured-Cisco-WebEx-video-conferencing. In-patient virtual rounding has not been extensively explored. Therefore, we conducted action research, where we learned by going through new practices.

Design and Methods:
Focus groups were conducted with 6 students enrolled for 2-weeks in virtual-rounding during pediatric in-patient-clerkship. As the pandemic improved, 4 students enrolled later, alternated virtual with physical rounding each week. We did focus groups before, during, and after their experience and record and transcribed them. Once a week, virtual rounds were also observed by a medical educator and field notes were created.

Results:
Based on key aspects, several themes were extracted. The following recommendations were generated.

- All team members should get orientation and have clear expectations.
- Pre-rounds are important for students to set social relationships with patients.
- To optimize audio quality during rounds, the audio device should be near the talker.
- Having a designated contact person in the team, is helpful for a virtual-student.
- Screen sharing of EHRs is useful during hallway discussion of patient cases.
- Due to the lack of social cues, the team should make explicit efforts to involve virtual-students.
- After rounds virtual students should have 15 minutes debriefing meeting with the attending.
- Work assignments (such as lab, consult call, etc) are helpful for virtual students to feel engaged.

Conclusions:
This study provides practical guidelines to medical educators and will contribute to the understanding of how virtual rounds can be implemented effectively for students' clinical learning experiences.

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Recommendations from a student-led community needs assessment to create a better-equipped healthcare workforce

Submission Type: Research Abstract
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Region: CGEA

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Abstract Body:

Research Statement/Research Question:
How do issues of justice, equity, diversity and inclusion affect medical students' personal wellbeing as well as their training to become physicians who care for diverse patient populations?

Background and relevance of the study:
Medical education often lags behind the changing socio-political landscape of the United States. Students from the Institutional Justice and Inclusion Committee (IJI) at a large, single-campus medical school initiated a community needs and assets assessment to better understand peer perceptions of justice, equity, diversity, and inclusion throughout both the pre-clinical and clinical years.

Design and Methods:
IJI committee members recruited their peers through student organizations and shared identities to participate in confidential semi-structured focus groups interviews from January-May 2020. Standardized templates were used by team members to structure the interviews. The qualitative data was de-identified, coded into discrete categories, and used to craft stepwise recommendations for institutional change.

Results:
Thirty-two focus group interviews were conducted. Findings were separated into 'issues' and 'assets.' Issues raised include students' concern that the current curriculum inadequately addresses important issues of racism in medicine, social justice, and health inequity. Participants also discussed the impact of limited avenues for conflict resolution and augmentation of resources to promote student well-being. Assets identified during the interviews include an unparalleled and diverse urban learning environment and strong institutional encouragement of student advocacy and innovation.

Conclusions:
Our peer-to-peer discourse led to three priority recommendations that were presented to leadership. The first priority recommendation is to assign a qualified individual to design and guide the integration of social justice advocacy issues through an iterative process into the four-year curriculum. The second is the creation of an ombudsperson office to organize student resources and mediate conflict. The final priority recommendation advocates for expansion of student support services through the hiring of more counselors and increased mentorship resources.

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Assessing the Impact of Clerkships on the Growth of Clinical Knowledge

Submission Type: Research Abstract
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Region: CGEA

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Abstract Body:

Research Statement/Research Question:
How do disciplinary clerkships impact medical students' growth in clinical knowledge?

Background and relevance of the study:
Third year medical students rotate through disciplinary clerkships, working in inpatient and outpatient settings, attending lectures and workshops, and studying independently to master content. The goal of this study was to assess the impact of these clerkships on students' growth in clinical knowledge using a specific model of longitudinal data analysis.

Design and Methods:
Our medical school administers the NBME Comprehensive Clinical Science Examination (CCSE) twice a semester during the three semesters of the third year. Using regression-discontinuity analysis, we assessed the change in growth in CCSE scores before and after the clerkship rotation. Disciplinary scores were extracted from each student's CCSE reports, and the differences of pre- and post- regression intercepts for each discipline were assessed separately. Disciplinary scores were plotted and modeled by linear mixed piecewise regression model using the lmerTest package in R (version 3.6.3) statistical software.

Results:
A total of 155 students were included in the study. Disciplinary knowledge increased significantly ($p < 0.001$) pre to post clerkship in all disciplines except surgery. The performance increase was largest in psychiatry and Ob/Gyn, where it exceeded 10% in CCSE disciplinary scores.

Conclusions:
Progress testing is a powerful tool for program evaluation as well as for feedback and assessment. In addition to the steady growth that we commonly saw in clinical knowledge in the third year, significant increase beyond the general growth were shown in some disciplines after their clerkship rotations. The largest gains were in psychiatry and Ob/GYN clerkships and may reflect more effective clerkship structure and delivery or a closer alignment between disciplinary specific knowledge and the CCSE. Lack of gain in surgery may relate to the organization of the clerkship, learning opportunities, or misalignment between content taught versus assessed on the CCSE.

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Impact of Programmatic Assessment on Practicing Physicians: A Qualitative Study

Submission Type: Research Abstract
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Region: CGEA

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Abstract Body:

Research Statement/Research Question:
Programmatic assessment (PA) treats assessment as a system that considers multiple factors of performance and continuous and varied feedback. PA stands juxtaposed to traditional assessment methods which rely on psychometric principles and examinations. We explored the downstream impact of PA experiences during medical school at the Lerner College of Medicine (CCLCM) on physicians. We examined how being trained under a PA framework prepared graduates to adapt learning strategies in postgraduate training, how they approached feedback, and improvements to be considered for CCLCM's system.

Background and relevance of the study:
CCLCM adopted PA methods in 2005 to assess student performance. Previous research investigates faculty perceptions of PA. To our knowledge, this is the first study exploring alumni perceptions and downstream effects of training within a PA system.

Design and Methods:
We conducted a qualitative study informed by a constructivist approach and thematic analysis to explore physicians' perceptions of PA experiences during medical school. With IRB approval, we invited alumni representing different clinical fields and career stages to participate in semi-structured interviews using a guide informed by the authors' knowledge of SDT, SRL, and PA. Interviews were conducted over a 4-month period (4/2019 – 1/2020). We thematically analyzed transcripts.

Results:
We reached data adequacy at 24 interviews. Several predominant themes emerged. Graduates valued learning to receive feedback in supportive environments to improve performance. By learning to act upon feedback, using portfolios and learning plans to understand the mechanics of the SRL cycle, they were able to internalize the process, making it more intuitive. Exposure to CBA and learning to use feedback to improve positioned graduates well for less-structured environments, where intrinsic motivation is essential. They appreciated how the curriculum provided flexibility yet emphasized deliberate practice to improve competence later in their careers.

Conclusions:
PA helps develop self-directed learners. Self-determination theory proved a useful lens through which to view learners' perceptions of PA.

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COVID-19, Professional Identity Formation and the Education of Medical Students

Submission Type: Research Abstract
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Region: CGEA

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Abstract Body:

Research Statement/Research Question:
The purpose of this study is to explore the impact of the COVID-19 pandemic on medical students' perceptions of their professional identity formation (PIF) and of virtual medical education.

Background and relevance of the study:
Professional identity formation has been defined as a lifelong process through which medical students internalize the professional values, ethics, knowledge, and skills necessary to practice as a physician (1). Medical educators from across the globe have called attention to the importance of considering the impact of the COVID-19 pandemic on PIF of medical students (2,3), including interventions to support learners' mental health and educational development (4). We sought to explore the impact of COVID-19 on medical students experience through a reflective writing exercise.

Design and Methods:
Medical students at Cleveland Clinic Lerner College of Medicine received prompt via email inviting them to reflect on the effects of the COVID-19 pandemic on their PIF. Reflections and inclusion in this study were voluntary. Reflections were analyzed using the immersion/crystallization method.

Results:
26 students (16%) consented to their reflections being used in this study. Themes emerged related to Changing Conceptions of the Role and Image of a Physician, Views about Medical Education, and the Role of Students in a Pandemic. Students viewed physician role models as altruistic, effective communicators, and pledged to be like them in the future. They expressed mixed views of the virtual curriculum; some mourned the loss of interactions with patients and its effect on clinical skills development; others described frustrations about not being more useful during the pandemic.

Conclusions:
Students' reflections demonstrated significant impacts on their evolving selves as professionals and their expectations and experiences related to their education. Educational programming should consider medical students' lived experiences, their impact on what it means to become a doctor in the midst of a crisis and develop curricula that support students' professional development in newly transformed roles.

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The Medical Student Check-in Survey to Assess Wellness: What Our Students Say and What Medical Schools Can Do

Submission Type: Research Abstract
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Region: CGEA

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Abstract Body:

Research Statement/Research Question:
Share findings from the Medical Student Check-in Survey (MSCIS) as they relate to informed changes to impact wellbeing at one large medical school.

Background and relevance of the study:
Studies of North American medical students show a higher prevalence of anxiety and depression than age-matched peers. Burnout impacts clinical practice and empathy. These studies demonstrate the need to understand wellbeing influences. Preliminary validity of MSCIS with MSLES was presented at AAMC 2020. Here we describe MSCIS to better understand important influences on wellness.

Design and Methods:
Medical students and faculty collaborated on development of MSCIS, a novel form derived after review of literature, designed to measure frequencies of behaviors and thoughts indicative of student wellbeing using neutral/positive language. The MSCIS was sent to the entire medical school student body with over a 90% response rate (n=1,023). Data from completed surveys was analyzed and missing data was imputed using listwise means.

Results:
Five factors of student wellness are measured by the MSCIS, with mean scores of each medical school year. Personal Confidence (3.24, 3.49, 3.4, 3.44), Hedonic Well-Being which measures happiness and basic needs (3.44, 3.56, 3.39, 3.86) and Knew Who to Call in Case of Emergency (3.56, 3.70, 3.01, and 3.28) change across medical school years. Social Support (3.72, 3.74, 3.85, 3.83) and Euodaimonic Well-Being which measures meaningful work & institutional support (3.19, 3.21, 3.24, 3.31) stay constant.

Conclusions:
Students' sense of wellbeing is influenced by multiple factors. Although the process is complex we are able to measure certain impactful influences. New interventions in 2020 include Early Alert text messaging, emails about medical school life to students and support givers, mental health first aid training, interventions focused on housing and food security, and increased access to mental health treatment. Providing this survey annually will lead to ability to measure change across the same cohort and inform leadership of future effective interventions.

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A Second Chance for Learning and Wellness: Implementation of Second Chance Quizzes

Submission Type: Research Abstract
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Region: CGEA

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Abstract Body:

Research Statement/Research Question:
Can a novel pre-clinical assessment approach (Second-chance quizzing (SCQ)) grounded in principles of assessment for learning and test-enhanced learning promote student well-being?

Background and relevance of the study:
Given the heightened appreciation of the detrimental impact of medical education on student well-being, new and impactful strategies to address this national issue are sorely needed.

Design and Methods:
With the matriculating class of 2019, University of Michigan Medical School initiated the SCQ system, wherein students take a mandatory first quiz during a flexible weekend testing window. The following Monday, all students are offered the optional SCQ, blueprinted similarly to the first quiz. The higher of the two quiz scores contributes to the student's overall course grade.

The number of students taking the SCQs, student testing behaviors, student performance, and psychometric data were recorded by ExamSoft. End-of-course evaluations contain questions about the SCQ system to assess student perceptions of this assessment strategy.

Descriptive analyses have been conducted to understand students' usage and impact of SCQs. Predictors of SCQ usage will be examined via logistic regression and ANCOVA and the student-selected testing window will be analyzed by Chi-Squared testing.

Results:
A combined 24 SCQs were administered: 20 in 2019-20, (n=177 students)] and 4 in 2020-21 (n=168 students).

The majority of students opted to complete the SCQ - ranging from 84 to 145 students [M=118.54, SD=18.67]. In 2019-2020, 100% of students completed at least 2 SCQs [M=13]. SCQs overall show a median score increase on an individual quiz of only 2.37%. On the 2019-2020 course evaluation, 86.8% of students reported that SCQs improved their wellness although 2.13% reported a decrease.

Conclusions:
The moderate score increase between the initial quiz and SCQ is interesting in light of the positive wellness outcomes reported by the students. Our preliminary data suggests that SCQs promote both well-being and learning without compromising the need to measure the attainment of mastery.

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Analysis of Medical Student Metacognitive Strategies for Correcting Comprehension and Performance Errors

Submission Type: Research Abstract
Accepted as: Poster
Region: CGEA

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Abstract Body:

Research Statement/Research Question:
The purpose of this study is to analyze the relationship of medical student metacognitive debugging strategies with conscientiousness and autonomy.

Background and relevance of the study:
Metacognition is a twenty-first century requirement for optimal student learning and higher standards of achievement.[1] Educational initiatives and curricular reform have necessitated the use of higher-order cognitive skills in learners in order to thrive in a competitive academic environment such as medical school. During the learning process, metacognitive debugging strategies can correct comprehension errors.[2] The link between these metacognitive strategies of learners and important individual characteristics needs to be better resolved in order to improve learning.[3]

Design and Methods:
In 2019-20, forty-one medical students voluntarily completed three self-reported surveys: Metacognitive Awareness Inventory (58-items, scale:0=false/1=true); Index of Autonomous Functioning (scale:1=not at all true/5=completely true); Five-Factor Personality Inventory (IPIP-120, scale:1=very inaccurate/5=very accurate) to measure conscientiousness.

Repeated-measures ANOVA compared mean scores across metacognitive factors. Stepwise multivariate linear regression was reported to predict metacognitive debugging strategies scores from conscientiousness and autonomy. IBM® SPSS® 24.0 used for statistical analysis. Study is IRB approved.

Results:
Repeated-measures ANOVA reported mean scores of debugging strategies (9.4(±1.2)) were significantly higher (all $p<0.001$) than metacognitive elements of information management (7.8(±1.6)), comprehension monitoring (6.6(±2.7)), planning (5.4(±2.0)), and evaluation (5.3(±3.0)).

A statistically significant linear regression ($R^2=0.82$, $p<.001$) of metacognitive debugging strategies on five conscientiousness facets of orderliness (beta=0.8), achievement striving (0.5), self-discipline (-0.4), dutifulness (-0.5), and cautiousness (-0.6) was reported. Orderliness, achievement striving, and self-discipline were mediated by personal autonomy (alpha=0.8).

Conclusions:
Medical students reported being great at detecting performance errors that they shouldn't have been making to begin with due to poor planning. Student metacognition debugging strategies yielded a complex, conflicting relationship with conscientiousness since two factors of achievement striving and orderliness improved student's metacognitive strategies, while self-discipline, dutifulness, and

cautiousness reduced it. Student autonomy was required to improve the impact of orderliness and achievement striving.

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Impact of Virtual Seminars on Cultural Stigma and Transmission Perception of Hepatitis B

Submission Type: Research Abstract
Accepted as: Poster
Region: CGEA

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Abstract Body:

Research Statement/Research Question:
With pre- and post-seminar questionnaires, we aim to assess the efficacy of virtual seminars in improving student understanding of Hepatitis B disease related stigma and transmission perception among WSUSOM first- and second-year medical students.

Background and relevance of the study:
According to WHO, 257 million people were living with chronic hepatitis B and 887,000 deaths resulted in 2015.[1] In addition, the lack of understanding of HBV's routes of transmission contributes to the fear of close contact.[2] HBV-related stigma may also present as a barrier to treatment and worsen prognosis, calling for the need to improve medical student awareness and knowledge.[2]

Design and Methods:
Twenty-five M1 and twenty-five M2 WSUSOM medical students completed the pre-seminar questionnaire prior to a virtual Hepatitis B Seminar, received thirty minutes of didactic lecture by Dr. Janilla Lee from University of Michigan Health System, and engaged in relevant case studies in randomly assigned small group breakout rooms. All participants then reconvened to discuss the cases. Post-seminar questionnaires were completed at the end of the session.

Results:
Our results (p-value=4.4x10-6) indicated a significant change in student perception in a scenario of a young Asian American patient presenting with HBV infection [Fig 2]. In the pre-seminar questionnaire, most participants selected sexual transmission (49.1%) as the likely cause of her infection, whereas in the post-seminar questionnaire student responded vertical transmission (69.6%) as the most likely route [Fig 2]. Furthermore, there was a significant change (p-value=0.001) with a 41.7% increase in selecting mother-to-child (vertical) spread and a 13.7% reduction in selecting close-contact (kissing, handshake) as ways to transmit HBV [Fig 3].

Conclusions:
Comparing the pre- and post-seminar responses, a significant change in HBV-related stigma perception elucidates the need to increase awareness of possible preconceived notions towards patients with infectious diseases in a clinical setting. Improvement in student understanding of Hepatitis B disease transmission demonstrates the effectiveness of education seminars.

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Ten-Year Mixed Methods Investigation of the Impact of the Clerkship Administrator Certificate Program

Submission Type: Research Abstract
Accepted as: Poster
Region: CGEA

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Abstract Body:

Research Statement/Research Question:
Research Question: What impact did the Clerkship Administrator Certificate Program have in your life?

Background and relevance of the study:
Background: Over the past 15 years, the roles and responsibilities of administrative staff supporting required clinical medical student experiences has evolved [1,2].Since 2004, the Association of American Medical Colleges Central Group on Educational Affairs (CGEA) has offered the Clerkship Administrator Certificate Program. This program requires completion of a series of workshops and a project [3]. Research related to long-term outcomes of professional development programs such as this are limited [4,5].

Design and Methods:
Design & Methods: We conducted a mixed methods survey of those who completed the qualifying workshops from 2010 to 2018. Changes were made to the workshops in 2010, which is why we chose this sample. The survey was developed based on the program content and included questions to characterize the impact the program had on their careers. Categorical and scaled data was summarized using descriptive statistics. The realistic evaluation framework was used to guide inductive and deductive content analysis, allowing respondent interpretations and context to define outcomes [6].

Results:
Results: Out of 244 invitations, 50 (20.5%) responded. Of the respondents, 40 still work in medical education in some capacity. Scaled responses (strongly disagree to strongly agree) were positive. Ratings were mixed for the question about recognizing personality types based on Myers-Briggs Test. Institutional and personal contexts (experience, funding, collaborators, time) impacted many individuals' ability to complete the certificate program. A disclosure that promotions and/or raises is not guaranteed by completing the program, several attendees reported these achievements. Additionally, on a personal level, participants felt more confident and accomplished in their career.

Conclusions:
Conclusions: Although positively rated, the success of this program had differential outcomes depending on participant contexts. Finding that participants completing the program received promotions and/or pay increases was rewarding.

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Evaluating Medical School Graduates' Perspectives on Co-curricular Programs

Submission Type: Research Abstract
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Region: CGEA

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Abstract Body:

Research Statement/Research Question:
Our study aims to investigate graduates' perspectives on the impact of co-curricular programs (CCPs) on their residency application and future endeavors.

Background and relevance of the study:
CCPs, which consist of specialized coursework supplementary to the regular curriculum, have become common among medical institutions. As of 2016, 74% of the top 43 ranked U.S. medical schools reported having CCPs such as global or innovation medicine [1-3]. For context, University of Illinois College of Medicine (UICOM)'s 4 CCPs graduate about 60 out of a class of 190 students each year. However, currently published studies have not investigated the impact of CCPs on participants' future endeavors.

Design and Methods:
We conducted 30-minute interviews with 23 graduates of CCPs at UICOM as a continuation of previous research involving focus groups among 26 current members. We employed referral sampling until we achieved sufficient information power [4]. In each interview, graduates were asked to reflect on the impact of CCPs on their career development. We employed open-and-focused coding to identify common themes in our transcripts [5].

Results:
First, half of graduates remarked that their CCP work was not a central theme in their residency applications, but the majority believed participation enhanced their application and/or interviews. While only some graduates expressed that participation in a CCP influenced their choice of specialty, half of the graduates mentioned that they have already proceeded to or plan to pursue projects in a field related to their CCP during residency or as an attending. Taking this into consideration, graduates' future endeavors were unanimously impacted by participation.

Conclusions:
Students desire mentorship to effectively design and execute a capstone project, as success in doing so contributes to their overall professional development. Co-curricular programs afford students the community and opportunity to develop the knowledge and skills necessary to later take on even greater endeavors to meaningfully impact healthcare.

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The impact of organizational communication on student wellness at a school of medicine: a qualitative study

Submission Type: Research Abstract
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Region: CGEA

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Abstract Body:

Research Statement/Research Question:
How do communication practices from administrators and faculty members affect student wellness in a school of medicine?

Background and relevance of the study:
Medical students face a disproportionately high level of anxiety, burnout and psychological distress during their educational training. Alarmingly, nearly one-third of medical students globally experience anxiety (1) and 27% experience depressive symptoms (2). As such, medical schools have introduced curricular changes and wellness programs to foster healthier learning environments. However, there is very little research exploring how communication practices, an integral component in a school medicine, can influence these outcomes. Therefore, this project aims to elucidate how organizational communication systems can impact mental wellbeing from a medical student's perspective.

Design and Methods:
This project is a subset of a larger study aimed at mapping organizational communication at Wayne State University School of Medicine. This study used various approaches to gain a rich perspective from medical students at different levels of training (M1 to M4). Data collection methods included focus groups, individual interviews, and surveys with open ended responses. Thematic analysis and triangulation processes were used to identify common themes in student responses.

Results:
Student wellbeing was positively influenced when intent was effectively communicated by administrators and faculty members. Student wellbeing was negatively impacted by several communication practices including overwhelming amounts of communication (i.e., email), failure to address negative attitudes in medicine (i.e., looking down upon individuals who utilize mental-health resources), concerns about confidentiality when approaching school advisors and a lack of timely communication.

Conclusions:
Our findings suggest that medical students may benefit from concise and timely communication practices that emphasize commitment to student wellbeing and confidentiality. Future steps include an analysis of differences in communication-related stressors based on student level of training (i.e., pre-clerkship compared to clerkship years). Similar studies can be conducted at any school of medicine with a desire to foster healthier communication practices.

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Utilization of standardized mannequins to enhance verbalization of clinical exam skills taught via video conferencing

Submission Type: Research Abstract
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Region: CGEA

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Abstract Body:

Research Statement/Research Question:
To determine student perceptions of standardized mannequins intended to enhance verbalization of clinical exam skills taught via video conferencing.

Background and relevance of the study:
The COVID-19 pandemic challenged institutions to amend traditional clinical examination skills curricula for preclinical second-year medical students. In compliance with strict social distancing guidelines, Loyola University Chicago Stritch School of Medicine educators developed an inexpensive solution that allowed for standardized instruction. Each student and physician educator were provided one cost-effective head and anterior torso mannequin lacking distal extremities, which conveniently offered portability and accessibility.

Design and Methods:
Students (n=182) were sent an anonymous survey to assess perceptions of mannequins as a tool for learning clinical skills. Using a 5-point Likert scale, four statements addressed verbalization of exam skills, two related to anatomy and palpation/manipulation, and one regarded projection of skills via video conferencing. Statistical analyses used Welch's t-test to individually compare statement means to each other.

Results:
Student responses (n=101, 55.49%) to "[mannequin use] compelled me to talk through exam skills out loud and therefore allowed me to know these steps more thoroughly", had a mean of 3.15, significantly higher than all other question means ($P \leq 0.0163$). Regarding the statement of learning "proper palpation and manipulation", the mean equaled 1.96, significantly lower than all other question means ($P \leq 0.0404$). Coincidingly, when asked if these mannequins were "satisfactory to learn the anatomical locations where physical exam skills should be performed", students reported a mean of 2.30, significantly lower than the four statement means addressing verbalization of clinical skills ($P \leq 0.0219$).

Conclusions:
Inexpensive and anatomically imperfect mannequins were never intended to replace a human body; however, they served as a standardized tool that allowed for improved verbalization and understanding of clinical exam skills. Though most calculated means fell below a neutral score, students had

significantly higher appreciation for using mannequins to practice verbalization of clinical skills compared to physical maneuvers.

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Call for an Integrated, Longitudinal Preclinical Electronic Health Record Curriculum

Submission Type: Research Abstract
Accepted as: Poster
Region: CGEA

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Abstract Body:

Research Statement/Research Question:
To assess student and clerkship director interest in a longitudinal Electronic Health Record (EHR) curriculum for preclinical medical students.

Background and relevance of the study:
Given the advantages and widespread use in healthcare, U.S. medical schools are strongly encouraged to incorporate EHR training into their curricula. EHR use during clerkship training continues to grow among allopathic medical schools. Early EHR introduction with routine engagement may increase proficiency and clinical learning during clerkship rotations.

Design and Methods:
Medical students at the Loyola University Chicago Stritch School of Medicine were anonymously surveyed and seven clinical clerkship directors were interviewed. First/second-year medical students (preclinical) completed a separate survey than third/fourth-year medical students (clerkship). Quantitative analysis and qualitative data identify opportunity for innovation to EHR training. Chi-Squared test of independence examined relation between education level and curriculum preference.

Results:
More preclinical students (n=170) responded than clerkship students (n=83), and reported a higher percentage of EHR experience before medical school (58.2% vs 42,4%, respectively). Collectively, 65.2% supported implementation of a longitudinal preclinical EHR curriculum, though clerkship experience may influence this standpoint (preclinical 70.9% vs clerkship 55.3%, $X2(4, N=253)= 20.6$, $p= 0.00038$). When starting clerkship rotations, only 19.0% of clerkship students felt prepared to use EHR while 56.0% did not. Second year medical students share this sentiment as 24.6% feel prepared and 55.4% do not.

Clerkship directors supported the idea of integrated preclinical EHR exposure and suggested emphasizing skills pertaining to clinical note documentation and systematic chart review. They believed experiences allowing students to practice EHR navigation may decrease EHR training time and increase bedside learning during clerkship rotations.

Conclusions:
These data present compelling evidence for the implementation of an integrated, longitudinal EHR curriculum during preclinical medical education. Next steps include addressing gaps and barriers in EHR education that limit student preparation for initial clerkship rotations and restructuring the existing EHR curriculum to better fulfill those needs.

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Comparing the Prevalence of Medical Student Mistreatment by Patients at School-Affiliated Sites

Submission Type: Research Abstract
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Region: CGEA

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Abstract Body:

Research Statement/Research Question:
This study assesses the most prevalent Wayne State University School of Medicine (WSUSOM) affiliated sites of student-reported patient mistreatment and examines the distribution based on class-year.

Background and relevance of the study:
Mistreatment of medical students by residents, faculty, and other employees involved in clinical education is a broadly recognized and researched occurrence. However, patients remain an overlooked source of medical student mistreatment. With national advances in preclinical curricula, students are required to work with patients earlier in their medical education, and these interactions are frequently at sites outside of the structured setting of clinical clerkships.

Design and Methods:
Our survey was modeled from the Association of American Medical Colleges Graduation Questionnaire and investigated medical student mistreatment by patients, excluding behavior attributed to neuropsychiatric symptoms, and the WSUSOM-affiliated sites at which the experiences occurred. It was administered to all students enrolled at WSUSOM in April 2020, with a completion rate of 50.7% (n=582).

Results:
Among all respondents, 43% reported at least one experience of patient mistreatment. The most prevalent site of patient mistreatment reported by third- and fourth-year medical students was hospital-based clinical rotations (70.3%, 76.4%), which reflects curriculum progression. Student-run or volunteer clinics were the most common sites for first-year students (41.5%), with WSUSOM-affiliated events and volunteer events (22.0%, 19.5%) as the next common locations. Continuity clinic was the most prevalent site (38.2%) for second-year students, with student-run or volunteer clinics following close behind (32.4%).

Conclusions:
Patient mistreatment is encountered at many WSUSOM-affiliated sites, suggesting that this may be a pervasive issue. These experiences must be acknowledged and researched, and the sites at which they occur should be documented in order to identify how medical education environments could be improved. The incorporation of these questions within institutional and national surveys could allow us

to gather necessary evidence that would influence future policies and procedures, helping us to abate these occurrences.

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Tips for Making Early Clinical Experiences Meaningful for Medical Students

Submission Type: Research Abstract
Accepted as: Poster
Region: CGEA

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Abstract Body:

Research Statement/Research Question:
The purpose of this study was to identify, from students' perspectives, specific teaching practices that promote student learning in early clinical experiences (ECEs).

Background and relevance of the study:
Many medical schools incorporate ECEs into their curricula (1). ECE students have less knowledge than typical clerkship students, and often spend only a brief time in each rotation. These factors necessitate clinician educators enact particular teaching strategies to create meaningful learning opportunities for learners at this level (2).

Design and Methods:
We conducted online focus groups with 20 second-year medical students who participated in two-week rotations with clinicians in various specialties. We asked participants to identify specific practices that clinician educators used that promoted their learning.

Results:
Participant responses revealed themes related to technical and teaching and learning aspects of the clinical experience. We collapsed these themes into two broad categories.

Inviting Students into the Work

Our participants noted they learned more when clinician educators invited them into the work by:

1) Introducing themselves and orienting students to the space and personnel.
2) Inquiring about, and responding to, students' interests and goals.
3) Adapting teaching to students' developmental levels of understanding.
4) Articulating their expectations and establishing routines for the day and the rotation.
5) Positioning students as members of the healthcare team.

Preparing for Patient Interactions

Our participants also noted their experiences were more meaningful when clinician educators prepared them for patient interactions by:

1) Asking students to research a related topic beforehand.
2) Encouraging students to ask questions.
3) Reviewing the patient's charts with students.
4) Cueing students to watch for certain things during patient interactions.
5) Talking through a procedure before going into the patient's room to perform it.

Conclusions:
This study provides concrete approaches to help clinicians teach with intent and can be used to inform professional development for clinician educators.

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The Formation of Online Learning Communities in a Pre-matriculation Program: A Mixed Methods Study

Submission Type: Research Abstract
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Region: CGEA

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Abstract Body:

Research Statement/Research Question:
To assess the impact of online content delivery and increased active learning activities on learning community formation in the University of Kansas School of Medicine's Pre-matriculation Program (PMP).

Background and relevance of the study:
The PMP is aimed at preparing students from underrepresented/disadvantaged backgrounds for the intensity of medical school; traditionally an in-person program, COVID-19 pushed PMP online for its duration. We evaluated the effect of virtual content delivery and increased active learning sessions on learning community formation.

Design and Methods:
We developed and administered two surveys; the first, at the end of PMP, and the second, after the first block of Year 1. Descriptive analyses were performed focusing on questions regarding learning communities and peer socialization. We also compared data from the 2019 PMP end-of-program survey with the 2020 PMP end-of-program survey. Additionally, we performed interviews assessing the impact of PMP on Year 1, with interviewees selected through purposive sampling of the 2020 cohort.

Results:
There were 17/25 responses (68%) on Survey 1, 14/25 responses on Survey 2 (56%), and 6 interviews were performed. Our preliminary data suggest that while the online-only curriculum decreased peer socialization, it had no effect on learning community formation. Additionally, the increase in active-learning activities may have helped students prepare for the rigor of Year 1. Respondents from the 2020 cohort studied more than 2019 cohort respondents.

Conclusions:
Students report that PMP helped with adjusting to online content delivery encountered in Year 1. Although COVID-19 restrictions and/or the virtual curriculum may have increased the amount of time students spent studying per day, learning community formation wasn't impacted negatively by online delivery. Our study shows that an online-only curriculum can be an appropriate alternative to traditional face-to-face curricula. However, institutions may need to provide opportunities for peer socialization. Future study is needed to determine whether learning community formation would benefit from increased social interaction.

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Could regional campus students experience greater savings from NRMP changes in 2020-1?

Submission Type: Research Abstract
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Region: CGEA

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Abstract Body:

Research Statement/Research Question:
Have students on regional campuses previously incurred greater costs and spent more time interviewing for residency?

Background and relevance of the study:
Applicant cost savings are anticipated from discontinuation of in-person residency interviewing due to the COVID pandemic. These savings could be higher for regional students if they previously had higher travel costs; however, literature searches failed to identify any information on NRMP-related costs for regional students. Any disadvantage for regional students should be considered in future recruiting arrangements.

Our hypotheses were that previously,

- Regional students incurred greater costs and spent more time interviewing than main campus peers;
- Cost and time differences were greater for applicants to non-primary care (PC) specialties

Design and Methods:
We analyzed data from a 6-year institutional study of NRMP participants to compare costs and time reported by students on both regional and main campuses. The 47-items questionnaire is distributed annually prior to announcement of NRMP results. T-tests were used to compare groups.

Results:
The response rate was 96.5% (1006/1042). Regional and main campus applicants reported overall mean cost of $2,639 and $4,287 ($p = 0.004$) respectively for PC; and $4,621 and $5,488 ($p = 0.015$) for non-PC. Average overall interview times were 26.38 vs 28.98 days ($p = 0.281$) for PC and 30.01 vs 29.47 ($p = 0.005$) for non-PC. The mean cost per completed interview was $289 vs $363 (PC; $p < 0.0001$) and $434 vs $444 (non-PC; $p = 0.01$). The mean time spent per completed interview was 2.8 (regional) vs 2.4 (main) for both PC and non-PC applicants.

Conclusions:
Regional applicants spent significantly less than those from the main campus. Differences were smaller for non-PC applicants. Mean interview time was significantly higher only for regional applicants to non-PC specialties. These unexpected results could be due to differences in application strategies and local availability of residency programs

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Third Year Medical and Pharmacy Students' Perceived Knowledge, Attitudes, and Concerns Related to the COVID-19 Pandemic

Submission Type: Research Abstract
Accepted as: Poster
Region: CGEA

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Abstract Body:

Research Statement/Research Question:
Determine third-year medical and pharmacy students' perceived knowledge, attitudes, and concerns related to COVID-19 early during the pandemic in the U.S.

Background and relevance of the study:
During pandemics, healthcare professionals are called to provide care. Much has been written about concerns of nurses, less about the concerns of physicians, and even less about the concerns of health professional students.

Design and Methods:
*Convenience sample of 3rd year MD & Pharm.D. students attending an WSU Interprofessional Patient Safety Educational ½ Day Event.
*A 10-item survey addressed personal risk, use of personal protective equipment (PPE), attendance at clinical practice sites, knowledge about and preparation for dealing with COVID-19, and impact on professional education.
*Nine questions used a 5-point Likert scale; one used a 3-answer format (yes/maybe/no). A comment section was provided.

Results:
Of 65 completing the survey, 27 (35.4%) had some level of concern about COVID-19; 7.7% were strongly concerned. More than half (52.3%) responded that they would wear a mask at work. During an epidemic, 4.3% would call in sick, 15.5% would avoid contact with patients, 38.0% would go to their clinical site.
When asked about knowledge, 58.5% agreed that they were very or somewhat knowledgeable; 80% disagreed with a statement that their respective program prepared them for dealing with a COVID-19 epidemic.
Most (84.6%) wanted their school to provide education about coronavirus geared towards healthcare professionals; 73.9% responded that the school should provide PPE.
More than a third (35.4%) were concerned that a coronavirus epidemic will adversely affect their education.
Four paired survey items were strongly correlated (PCC>0.5).Overall, students wanted to be educated, protected from COVID-19, and have their concerns considered.

Conclusions:
Medical & Pharmacy educators should proactively address students' concerns about their personal welfare and education during an epidemic. The COVID-19 pandemic is an opportunity to reemphasize the need to include such education into the professional curriculum.

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Evaluation of a Patient Intervention Capture Survey Process in an Interprofessional Student-Run Free Clinic

Submission Type: Research Abstract
Accepted as: Poster
Region: CGEA

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Abstract Body:

Research Statement/Research Question:
The purpose of this study was to evaluate the impact a patient intervention capture survey (PICS) has made to improve interventions within the clinic.

Background and relevance of the study:
In order to evaluate interventions completed by students at CHIP clinic, an interprofessional student-run free clinic, a PICS was developed. The PICS generates data regarding educational interventions and services were provided within four disciplines, including medicine, pharmacy, social work, and physical therapy.

Design and Methods:
An initial PICS developed in 2016 captured medical education, medications, physical assessments, referrals to other providers, and other services provided by students during the clinic. Results were evaluated and the survey was modified twice for easier data capture and better alignment with interventions with the intention of capturing prospectively. The results of this study are from the original PICS and two modified PICS, which will be called PICS1 and PICS2.

Results:
Using PICS2 data, 95% of patients received some intervention overall. With the original PICS and PICS1, patients who were provided with medical and pharmacy education interventions increased from 58% to 94% with an average of 5.4 to 8.3 patients per month. With PICS2, medical and pharmacy education interventions remained at 94%, with an increased average of 10.6 patients per month. Social work interventions increased from 3.2 to 4.5 to 10.6 in original PICS, PICS1, and PICS2, respectively. PICS2 also introduced a new set of questions regarding physical therapy education, in which 83% of patients were provided intervention with an average of 8.9 patients per month.

Conclusions:
Modifications made to the PICS survey have improved the quality and quantity of interventions. A major increase in social work interventions and referrals was due to increased social work student participation, which was addressed since implementation of PICS1. Additional data physical therapy interventions will be documented accordingly. Continued follow-up and evaluations of interventions captured will continue to be made.

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Continuous, Peer-Led Curriculum Feedback During Curriculum Revision: An Opportunity for More Timely and Actionable Feedback

Submission Type: Research Abstract
Accepted as: Poster
Region: CGEA

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Abstract Body:

Research Statement/Research Question:
Can a peer-led, continuous feedback tool lead to more efficient and timely improvements during a curriculum revision than traditional feedback methods alone?

Background and relevance of the study:
In response to changing educational landscapes and standards, the rate of curricula reform has been increasing in medical schools across the nation. Despite many medical schools modifying, or completely redesigning, their curricula, best practices for monitoring a curricular revision are not well documented. Furthermore, traditional student feedback tools often rely on mandatory, end-of-course surveys, missing opportunities to make changes within a course, or for the next course during a curricular revision.

Design and Methods:
Study Design: Single Institution, Cohort Study

Methods:Encompassing a single institution's preclinical curriculum revision, an online curriculum feedback tool was created, advertised weekly, and continuously tracked by students over 3 years. Date of submission, category, topic, urgency, description of responses, and a rating of curriculum were collected with each response. Respondents had the option to include their information or remain anonymous. Descriptive statistical analyses were performed.

Results:
Class A had 61 responses (M1=13, M2=48) during the final years of the legacy curriculum. Class B had 252 responses (M1=177, M2=77) as the first class in the new curriculum, and class C had 226 responses (M1=108, M2=119). A mean of 92% +/- 7% of responses were recorded more than 1 week before an exam by classes B and C. The average time between responses was 10, 3, and 2 days for each class, respectively. However, the most common interval was 0-1 day with 372/514 (72%) responses. The next most common intervals were 1-2 days (7%) and 8-plus days (9%).

Conclusions:
When continuously available and monitored by similarly invested students, a peer-led, student feedback tool can help drive more timely and consistent improvements throughout a curriculum revision for both students going through the revision and future classes.

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Gender-linked Differences in Internal Medicine Clerkship Evaluations

Submission Type: Research Abstract
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Region: NEGEA

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Abstract Body:

Research Statement/Research Question:
Are there gender-linked differences between male and female student Internal Medicine evaluations?

Background and relevance of the study:
Previous work has described gender-dependent differences in clerkship evaluations (1,2,3). To better understand how gender affects clerkship evaluations, we studied multiple metrics of Internal Medicine (IM) evaluations.

Design and Methods:
We analyzed Sidney Kimmel Medical College's IM evaluations from 2017-2018, composed of a narrative, suggested grade, and a Likert scale (1=below expectations, 2=expected, and 3=exceeds expectations) assessment of various competencies. We evaluated summary statistics by gender, and determined which traits were correlated with the evaluator suggested grade. We computed word embeddings to examine contextual relationships between words (4).

Results:
There was no difference in final grade distribution ($p = 0.0886$) or NBME IM score ($p = 0.6558$). Female students performed better on the Likert scale evaluation of patient interaction ($p < 0.0001$), growth mindset ($p = 0.0195$), communication ($p = 0.0128$), compassion ($p = 0.0005$), and professionalism ($p = 0.0252$). Performance on the NBME exam correlated with subjective assessment of medical knowledge ($p < 0.0001$). While there was no difference in how subjective knowledge assessment increased with NBME score ($p = 0.2549$), at comparable NBME scores female students received lower subjective knowledge assessment scores ($p < 0.0001$). There was no correlation between evaluator-suggested final grade and knowledge assessment, patient interaction, or growth mindset scores. Professionalism score was positively correlated with the suggested grade, compassion, and teamwork ($p < 0.0001$ for each). Narrative evaluation length did not differ ($p = 0.5013$), but evaluators more often referenced male students by name ($p = 0.0014$). Computational language analysis revealed differences in the words associated with gender pronouns. Notably, "he" was associated with agentic terms (skills/rounds/clinical), and "she" with personality terms (wonderful/eager/helpful).

Conclusions:
Although there was no difference in the final suggested grade, there were numerous gender dependent differences in evaluating medical students.

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Pediatric Physical Exam Skills in Preclinical Medical Student Education

Submission Type: Research Abstract
Accepted as: Oral Presentation
Region: NEGEA

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Abstract Body:

Research Statement/Research Question:
Our aim is to assess what pediatric physical examination skills (PedPEx) clinical skills course directors (CSDs) and pediatric clerkship directors (PCDs) feel medical students should have prior to starting their pediatrics clerkship (PC).

Background and relevance of the study:
There is a striking variability on how and when pediatric clinical skills are taught, including not being taught at all in preclerkship curricula up to 18% of medical schools. Approximately one-third of third year students did not feel well-prepared for their PC, including 40% identifying inadequate preparation with regards to PedPEx. This discrepancy persisted when comparing preparation for the PC to that of internal medicine, family medicine, surgery, and obstetrics-gynecology.

Design and Methods:
We surveyed PCDs and CSDs at North American medical schools, regarding the level of competence students should have in performing various PedPEx prior to starting their PC. The survey tool was piloted by our research group, with review by survey teams from Council on Medical Student Education in Pediatrics and Directors of Clinical Skills Courses. The final survey was sent to member lists for each of those organization, representing PCDs and CSDs.

Results:
We had a total of 139 responses, including 91 PCDs and 44 CSDs. For the majority of PedPEx, both sets of respondents felt students should have knowledge of and some ability to perform the exam maneuver in children. Exceptions included newborn-specific and developmental assessment skills, which both groups felt students should have knowledge, but not an ability to perform. CSDs felt a higher competence of development assessment skills was warranted as compared to PCDs ($p<0.0001$).

Conclusions:
Both PCDs and CSDs believe students would benefit from knowledge of and some ability to perform PedPEx prior to the PC. Further exploration of how and when to incorporate this learning could serve as a starting point for curricular improvements.

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Platform Presentation: Pediatric Academic Societies' Annual Meeting, San Diego, CA, April 26, 2015; and Poster Presentation: Council on Medical Student Education in Pediatrics Annual Meeting, New Orleans, LA, March 12, 2015

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Abandoned: Legacy Students and the Emotional Landscape of Curricular Transformation

Submission Type: Research Abstract
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Region: NEGEA

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Abstract Body:

Research Statement/Research Question:
To capture the emotional responses of stakeholders who participated in curricular transformation at Sidney Kimmel Medical College (SKMC) more than 2 years after change initiation.

Background and relevance of the study:
Medical schools nationwide are changing curricula.1 These are not snapshot events; they impact stakeholders over years. No published studies, however, have examined the emotional impact of curricular change on multiple stakeholder groups over time.2-6 This lack of insight is a critical gap given widespread curricular transformation efforts.

Design and Methods:
In 2019, data were collected using group concept mapping methodology, an asynchronous, mixed methods approach using qualitative and quantitative measures to identify themes characterizing the emotional experience during curricular transformation. Participants were faculty, students and staff at SKMC 27 months after curricular change initiation. Multidimensional scaling and hierarchical cluster analyses were used to analyze the data.

Results:
Among 335 eligible participants,123 completed brainstorming (36.7%), 153 completed rating (45.7%) and 33 completed sorting (9.9%). Six major themes emerged: 1) Enthusiastic 2) Apprehensive 3) Overwhelmed 4) Missed Opportunities 5) Uncertain 6) Abandoned. Mean statement ratings in the enthusiastic theme were highest while those in the abandoned theme were lowest. Demographic subgroup analysis revealed students in the new curriculum (Class of 2021) rated statements in the enthusiastic cluster highest (2.86 vs. 2.12; $p<0.001$) while students in the legacy curriculum (Class of 2020) rated statements in the abandoned cluster highest (2.71 vs. 2.17; $p=0.03$). Modest response rate and demographic sub-group size are limitations.

Conclusions:
Curricular change is emotionally taxing. Given the ubiquity of curricular transformation which includes the structural presence of a legacy cohort, all medical schools embarking on this challenge need to carefully attend to the varied emotional responses of the different stakeholder groups. Next steps to evaluate the long-term impact on legacy cohorts are to investigate changes in AAMC GQ data, home institution match rates and alumni-giving.

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Evaluating Student Perceptions of Microaggressions in the Medical School Learning Environment

Submission Type: Research Abstract
Accepted as: Oral Presentation
Region: NEGEA

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Abstract Body:

Research Statement/Research Question:
To what extent are microaggressions experienced by learners within medical school learning environments?

Background and relevance of the study:
Recently, there has been a call for reconstruction of medical education that emphasizes social determinants of health "so that future doctors are more prepared to discuss and treat racial inequalities"[1]. Although there is a general consensus in the literature on a need for race-centered education, there is a lack of research evaluating how medical students perceive and experience learning environments in the context of microaggressions.

Design and Methods:
A 61-item bi-annual internet-based survey at Alpert Medical School with participants from 4 consecutive class years. Students were invited to participate via email invitations to official class list-servs.

Results:
126 out of 432 students responded to the full survey (response rate of 29.1%). 70.6% of respondents reported having witnessed a microaggression in the context of medical school. 26.0% of respondents reported being unsure, 11.0% of respondents had not experienced a microaggression (SD= 0.6). 44.4% of respondents reported having themselves experienced a microaggression in the context of medical school. 17.5% respondents were unsure. Of students who had experienced a microaggression (n=56), 96.0% chose not to report the incident to the administration (SD= 0.2). 26.0% of students reported being very/somewhat confident that upon reporting the medical school would appropriately intervene (SD= 0.2).

Conclusions:
Uncertainty around what constitutes a microaggression in an educational space may lead to hesitancy surrounding formally reporting incidents. Additional bystander training for faculty, students, and staff focusing on definitions of safe spaces and microaggressions may improve reporting. The institution may encourage reporting and build trust with students by clarifying the formal process for complaints and engaging in collective community care following an incident.

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Demographic Factors Associated With Taking Leave of Absence from Medical School

Submission Type: Research Abstract
Accepted as: Oral Presentation
Region: NEGEA

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Abstract Body:

Research Statement/Research Question:
In this study, we examined medical trainees' characteristics and experiences that are associated with taking a medical school leave of absence (LOA).

Background and relevance of the study:
Taking a LOA is significantly associated with attrition from medical school.1 There is a paucity of data on whether disparities in the occurrence of this outcome.

Design and Methods:
De-identified, individual-level data were provided by the Association of American Medical Colleges for 48,406 medical matriculants in academic years 2007-2008 to 2011-2012. We examined in association with the likelihood of LOA using multivariable logistic regression models. Predictors of LOA included MCAT scores, first-generation (no parent with a 4-year degree) or continuing-generation college graduate (at least 1 parent with a 4-year degree), sex, ethno-racial identity, matriculation age, undergraduate institution Carnegie classification, pre-medical experiences, and parental household income. Statistical analyses were performed using STATA 16.1.

Results:
Students who took LOA were from more likely to come from lower- (vs. higher) income households (aOR:1.19, 95% CI:1.09, 1.31) and who participated in summer enrichment (aOR:1.16 , 95% CI:1.03, 1.31) and post-baccalaureate pre-medical programs (aOR:1.26, 95% CI:1.10, 1.45). In addition, compared to non-Hispanic (NH) White students, students who identified as NH Black/African American (aOR:1.34, 95% CI:1.13, 1.59), NH Asian/Native Hawaiian/Pacific Islander (aOR:1.37, 95%CI:1.22, 1.54), NH American Indian/Alaska Native (aOR: 2.02, 95% CI:1.29, 3.19), NH Multiracial/Other (aOR:1.81, 95% CI:1.58, 2.09), and Hispanic/Latinx (aOR:1.30, 95% CI:1.09, 1.56) were more likely to take an LOA. Students with higher MCAT scores (aOR: 0.95, 95% CI:0.94, 0.96) and laboratory or health volunteer/work experiences (aOR:0.84, 95% CI:0.72, 0.99) were less likely to take a LOA.

Conclusions:
This study reveals ethno-racial and income disparities between medical students who do and do not take a LOA from medical school. Retention initiatives should focus on addressing the factors that influence this disparity; retaining the next-generation of diverse demands it. 2-4

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Preparing Students for Uncertainty in Clinical Practice: Recommendations for Clinical Clerkships

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Accepted as: Oral Presentation
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Abstract Body:

Research Statement/Research Question:
We aim to provide recommendations for clerkships to better prepare medical students (MS) for uncertainty in practice. We sought to: 1) capture MS's general self-efficacy (GSE) and intolerance to uncertainty (IUS); 2) describe perceived comfort with uncertainty during clerkships; 3) identify pedagogies that best prepare MS for these situations.

Background and relevance of the study:
MS encounter situations when a diagnosis cannot be made; when treatment recommendations are at odds; when social determinants complicate management. How can clerkships prepare MS for clinical uncertainty?

Design and Methods:
This is an observational cross-sectional study of 289 3rd-year MS from an urban medical school surveyed at the end of clerkships. The survey consisted of GSE and IUS validated scales. Items asked students to rate preparedness, confidence, and comfort for uncertainty in clinical practice. Items on curricular programs asked MS to identify components of training that prepared them for uncertainty in clerkships, and examined correlations with specific elements of uncertainty (EOU): preparing for uncertainty, communicating and building relationships during times of uncertainty, and overall wellbeing. Spearman's correlation coefficient, Chi-Square, and ANOVA were used to assess GSE, IUS, clinical, and curricular items. Open responses were analyzed to generate themes using Braun and Clarke's Framework.

Results:
GSE was inversely correlated with IUS ($p<0.001$). GSE scores had a positive correlation with EOU ratings ($p<0.005$). IUS had an inverse correlation with EOU ratings ($p<0.005$). Curricular pedagogies with statistically-significant relationships with preparing MS for uncertain situations, communicating and building relationships during times of uncertainty, and overall wellbeing included: team debriefs, role plays, case-based learning, team-based learning, story slams, and sharing narratives with peers and faculty ($p<0.05$). Qualitatively, MS appreciated storytelling, role-modeling of communication strategies, debriefing, and simulations.

Conclusions:
Specific educational formats may help MS cultivate skills to adapt to uncertainty in practice. Clinical debriefs, interprofessional role plays, simulations, communications skills sessions, storytelling, and peer-to-peer conversations may have the most impact.

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Applying to medical school: The experiences of first generation and continuing generation medical school matriculates

Submission Type: Research Abstract
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Region: NEGEA

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Abstract Body:

Research Statement/Research Question:
Describe the path to medical school for students and determine whether overall experiences varied by college graduate generational status (First Generation [FG] or Continuing Generation [CG]).

Background and relevance of the study:
Differences in medical school matriculation rates exist between FG and CG pre-medical students.1 This pilot study is a first step in understanding why this disparity exists.

Design and Methods:
Data were collected from three northeastern US medical schools using an embedded mixed-methods approach following IRB approval from Albany Medical College. All enrolled medical students from each campus were invited to complete a brief survey on their experiences and perspectives about applying for and matriculating to medical school. A subset convenience sample of interested respondents was contacted for a follow-up, semi-structured interview. Inductive qualitative analysis was used to develop codes and themes.2

Results:
Survey data indicate that 21% (136/644) of the respondents identified as FG and 79% (508/644) as CG. WHO-5 wellness scores, a measure used to assess mental health and wellness,3 were comparably low among both student groups, with 37.4% of students overall fitting criteria for recommended depression screening. Overarching themes from the interviews were: Economic, cultural and social, with clear similarities and differences between FGs/CGs. Both groups expressed remarkable stress and anxiety throughout the pre-/post-application phases, but differences existed between the FG and CG groups in access to support, perception of the impact of identity on the application process and financial implications.

Conclusions:
While the overall application process for FG/CG students is stressful, in many cases, CG students are better prepared to manage the challenges of the process. Providing more support to FG students during the pre-application phase could provide a stronger foundation for success further along the physician trainee pathway. Providing systems that help applicants navigate the financial, social, and emotional aspects of the process could result in greater success in inclusion of FG physician aspirants.

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Lessons from the Association of American Medical Colleges (AAMC) Core Entrustable Professional Activities (EPAs) for Entering Residency Core EPA Pilot Project: Learning Goal Orientation and Student Perceptions about the Core EPAs

Submission Type: Research Abstract
Accepted as: Oral Presentation
Region: NEGEA

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Abstract Body:

Research Statement/Research Question:
Is growth mindset associated with positive student perceptions of Core EPAs?

Background and relevance of the study:
The AAMC Core EPAs using an entrustment framework have been piloted at 10 U.S. medical schools since 2015. As prior work from these schools postulated that a growth mindset is an important learner perspective for successful EPAs implementation, we investigated the relationship between students' Learning Goal Orientation (LGO, an instrument established by others to measure growth mindset) and their perceptions about the Core EPAs implementation at their schools.

Design and Methods:
Using a subset of data from the 2020 AAMC questionnaire administered to third-year (M3) clerkship students at selected pilot schools, we tested a set of demographic characteristics, attitudinal variables about Core EPAs implementation, and frequency of direct observation/feedback on EPAs.for their associations with LGO score (the sum of responses to the five LGO instrument items, each rated 1=strongly agree to 6=strongly disagree) in bivariate analyses; 2-sided $p < .05$ considered significant.

Results:
Among 238 students, the mean (standard deviation) LGO score was 8.9, (3.3). LGO was not associated with age, gender, race or school (each $p > .05$). Lower LGO score (i.e., a stronger LGO) was associated with each of: comfort with asking supervisors for EPA assessments (p5 (vs ≤ 5) times in performance of multiple EPAs (each $p < .05$).

Conclusions:
M3 students with a stronger LGO – a "growth mindset" – had more positive perceptions about the use of Core EPAs and had more frequent feedback from their supervisors.

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Investigating Drivers of Burnout Among Pediatric Fellowship Trainees

Submission Type: Research Abstract
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Region: NEGEA

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Abstract Body:

Research Statement/Research Question:
We sought to understand drivers of burnout among pediatric fellowship trainees and their perceptions of the impact of COVID-19 on their wellness.

Background and relevance of the study:
Specific factors contributing to burnout among pediatric fellows are poorly characterized; consequently, how best to address their burnout is not well-understood. Based on pilot data from our institution demonstrating over 50% of pediatric subspecialty fellows meet the threshold for burnout, we sought to explore the drivers of both burnout and wellness among fellows using qualitative methodology.

Design and Methods:
We conducted focus groups with a convenience sample of pediatric fellowship trainees at our freestanding tertiary-care children's hospital. We facilitated the focus groups using a semi-structured interview guide. Focus groups were recorded, transcribed, and de-identified. Using principles of thematic analysis, we inductively derived codes, applied codes to segments of data, and iteratively scrutinized coded data to identify emerging themes – emphasizing protective factors for trainee wellness, and avoidable and unavoidable drivers of burnout based on the study's conceptual framework.

Results:
We conducted 9 focus groups with 43 fellows representing 24 fellowship programs. Fellows identified avoidable drivers of burnout: administrative burden, workforce-workload misalignment, lack of transparent expectations, technology burden, and scheduling challenges. Unavoidable drivers included: work-life conflict and inherent demands of the medical profession. Fellows noted factors protective of wellness : strong interpersonal/interprofessional relationships; program support and responsiveness; and the ability to find meaning in work. Regarding COVID-19, fellows reported feeling supported by their fellowship programs, but described feelings of anxiety and increased work-life conflict.

Conclusions:
This study identified both avoidable and unavoidable drivers of burnout among pediatric fellowship trainees, providing valuable insight into programmatic and institutional changes that may ameliorate burnout. Consistent fellow trainee input and feedback in burnout prevention strategies are critical and should be actively solicited. Furthermore, our study informs how programs may support trainees in extreme circumstances e.g., the COVID pandemic.

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Mistreatment of Providers by Patients and Family Members: Effect of an organizational strategy on provider knowledge, self-efficacy, and safety incident reporting of mistreatment

Submission Type: Research Abstract
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Region: NEGEA

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Abstract Body:

Research Statement/Research Question:
We investigated the prevalence of mistreatment of health care providers (HCPs) by patients and family members and the effect of an organizational strategy on HCP knowledge of and self-efficacy in addressing and reporting of mistreatment.

Background and relevance of the study:
Mistreatment of HCPs is common and is associated with burnout and lower quality patient care. Unfortunately, mistreatment of HCPs by patients/family members is under-reported and data on effective strategies to mitigate it are lacking.

Design and Methods:
In this single-center, serial cross-sectional study, we sent an anonymous survey to HCPs before and after intervention, consisting of training, incident reporting, and response protocol, to assess knowledge, self-efficacy and experiences of mistreatment by patients/family at Yale New Haven Children's Hospital 2018-2019. Training included ERASE and "Ouch! That Stereotype Hurts" sessions. We modified the safety incident reporting software to track reports of mistreatment. Multivariable logistic regression examined the effect of intervention on outcomes of interest and moderation by staff role.

Results:
A total of 309 baseline surveys were completed by 72 faculty, 191 nurses, and 46 residents, representing 39.1%, 27.1% and 59.7%, respectively, of eligible HCPs. Verbal threats from patients/family members were reported by 69.5% of HCPs. Offensive behavior was most commonly based on age, gender, ethnicity or race and appearance, but varied by role. HCPs who received training had higher odds of reporting knowledge of mistreatment policies [OR 2.7[CI 1.38-5.32]], a standardized approach [OR 4.43[CI 2.03-9.67]] and intervening effectively when experiencing 1.93[0.93-4.01] or witnessing mistreatment 2.39[0.99-5.78]. They had at least twice the odds of reporting having experienced offensive behaviors by patients/family. Incident reporting of mistreatment by patients/family increased three-fold after intervention.

Conclusions:
This is the first report of an effective organizational approach, utilizing existing patient safety

infrastructure, to address mistreatment of HCPs by patients and family members, which can be readily adopted by other institutions.

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Illuminating educational outcomes of students who self-identify with more than one ethno-racial category

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Region: NEGEA

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Abstract Body:

Research Statement/Research Question:
We examined association between bi-ethnoracial identity on medical school dismissal and withdrawal rates.

Background and relevance of the study:
In medical education research, multiracial students are often been categorized as a monolith, or have been categorized, based on the combination reported, with one racial/ethnic category (1).

Design and Methods:
Deidentified data from the Student Records System and the National Board of Medical Examiners were obtained for US medical school matriculants in academic years 2007-2008 through 2011-2012. Students' self-reported ethno-racial identity was categorized into mono-ethnoracial and bi-ethnoracial categories. Mono-ethnoracial categories include Non-Hispanic (NH) White, Asian, Black/African-American, and American Indian/Alaskan Native/Pacific Islander. Bi-ethnoracial categories included Black-NHWhite, Asian-NHWhite, Native-NHWhite, Native-Black or Asian, Asian-Black, Hispanic-White, Hispanic-Black, Hispanic-Asian, and Hispanic-Native. Other factors considered include sex, age at matriculation, college Carnegie Classification and MCAT scores. Multivariable logistic regression assessed the association between ethno-racial identity and graduation and dismissal/withdrawal. Adjusted odds ratios (aOR) and 95% confidence intervals (CI) are reported. R v3.6.0 was used for analysis.

Results:
Of 65,606 students in our cohort, 59.5% NHWhite, 19.0% Asian, 6.3% Black/African-American, 0.4% American Indian/Alaskan Native/Pacific Islanders, 0.2% Black-NHWhite, 1.6% Asian-NHWhite, 0.4% Native-NHWhite, 0.1% Native-Black or Asian, 0.1% Asian-Black, 4.9% Hispanic-White, 0.3% Hispanic-Black, 0.2% Hispanic-Asian, and 0.07% Hispanic-Native. Compared to monoracial White students, Hispanic-White (aOR:2.55,95%CI:1.52-4.01) and Black-NHWhite (aOR:3.98,95% CI:1.97-7.28) students were more likely to withdraw or be dismissed. Compared to monoracial Asian students, Native-Asian (aOR:3.33,96%CI:1.64-6.12) were more likely to withdraw or be dismissed. No significance was found for Hispanic-Asian, Black-Asian, or White-Asian. Compared to monoracial Black students, Native-Black (aOR:2.34,95%CI:1.15-4.30) students were more likely to be withdraw or be dismissed.

Conclusions:
Significant differences were observed in the academic experiences and trajectories of bi-ethnoracial-identifying medical school matriculants. Our study shows the effect of disaggregation of self-reported

ethnoracial identity and suggests a new norm of disaggregating the category of students who select more than one ethnoracial category may be needed.

References:
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Virtualizing Undergraduate Medical Education During the COVID-19 Pandemic

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Region: NEGEA

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Abstract Body:

Research Statement/Research Question:
In the context of COVID-19, how have changes made to the curricula impacted the perceived quality of undergraduate medical education from the perspective of undergraduate medical students?

Background and relevance of the study:
Global coronavirus disease 2019 (COVID-19) pandemic has led to profound changes to medical education, including transition of traditional didactics and clinical training to virtualized environments(1-4). It is currently unclear how these efforts impacted perceived quality of undergraduate medical education (UME). This work sought to comprehensively assess undergraduate medical students' perceptions of changes made to basic science didactic education and clinical training during COVID-19.

Design and Methods:
A survey with questions soliciting perspective on changes to UME training was electronically distributed to all students (n=1092) at Sidney Kimmel Medical college (SKMC). Data were collected from August 2020 to November 2020. Significant differences in survey responses across study cohorts were assessed with chi-squared testing. Significance was assigned when $p<0.05$.

Results:
Approximately 39.7% medical students (n=434) responded. At a confidence level of 95.0%, the overall margin of error for this study was ±3.6%. Second- and third-year students reported positive impact on self-pacing of virtually delivered lectures (77.5% and 73.3%, respectively), and negative impact on in-person clinical experience (94.6% and 92.5%, respectively). Second-year students reported negative impact to volunteer opportunities (87.8%), clinical shadowing (86.1%), student organization involvement (78.3%), and research (72.2%). Over a third (35.2%) of fourth-year respondents reported clinical instruction supplemented with telemedicine visits, of which 83.3% reported it to be less educational and 79.2% reported an inferior clinical experience. Fourth-year students planned to apply to more (40.0%) or significantly more (12.9%) residency positions.

Conclusions:
Virtualization of UME appeared to improve students' perceived quality of didactic education. Reduced availability of in-person clinical, research, and volunteer experiences consistently concerned students across all class years – particularly with respect to their ability to holistically identify and match into their specialty of choice.

References:

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Mitigating Racial Disparities in Surgery Clerkship Grading

Submission Type: Research Abstract
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Region: NEGEA

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Abstract Body:

Research Statement/Research Question:
We aimed to evaluate for the presence of racial disparity in Surgery clerkship grading and to determine the potential source of such disparity.

Background and relevance of the study:
Racial disparities unfortunately exist in the healthcare system, evident in access/quality of care and patient outcomes as well as in medical student education. (1-3)

Design and Methods:
We conducted a cross-sectional study of 2017 - 2019 Surgery clerkship grades at Columbia University. Self-reported race, final clerkship grades, and scores on individual grade components—NBME Surgery Shelf exam (10% of grade), Surgery clerkship-specific Clinical Reasoning Exam (30%), and clinical performance evaluation components (60%, including Teamwork, Fund of Knowledge, History and Physical, Learning Efforts, and Professionalism)—were obtained. Race was initially evaluated by under-represented minority (URM) status and then by Asian, Hispanic, Black, White and Other. Disparities were evaluated in Honors and scores received in separate grading components by race. Also, analyses investigated which grading components were predictive of receiving Honors. Logistic regression was used.

Results:
There were 565 students in our sample. The distribution of Honors by race was as follows: 24% in URM, 32% in Asian, 26% in Hispanic, 16% in Black, and 35% in White students. We found that URM students received lower Fund of Knowledge scores compared to their White counterparts (2.23 vs. 2.41, $p=0.01$). Shelf score was not associated with Honors for URM students though it was for White students (68.13 vs. 75.67, $p<0.01$). All other grading categories predicted Honors for White and URM students.

Conclusions:
Racial disparity was found in Surgery clerkship grading. Black students received significantly fewer Honors compared to White counterparts. Potential sources of bias were Fund of Knowledge assessment and the Shelf exam. We decreased the weights of these categories in our algorithm for final grades and will amplify faculty development efforts to further mitigate bias.

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Large Differences in Grades and Awards: A Cascade With Serious Consequences for Students Underrepresented in Medicine. Acad Med. 2018;93:1286-1292.

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A New Micro-Climate Survey Tool to Assess Inclusion in Medical Education

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Abstract Body:

Research Statement/Research Question:
Collaborators from three medical schools developed and validated a brief student survey suitable for measuring inclusion in individual classes/courses.

Background and relevance of the study:
The LCME, ACGME, and AAMC have made diversity a priority. Inclusion is often neglected because it is difficult to assess, particularly in microclimates within medical school. This innovation aims to provide initial validity evidence for a new student survey tool to measure inclusion.

Design and Methods:
We reviewed existing literature. We established face and content validity of the survey instrument. It was revised based on expert feedback, and pilot-tested. The instrument focuses on 3 main areas for students:

1) Assess students' "level of comfort" participating in a specified class or course as it related to personal differences (e.g., race, religious beliefs, socioeconomic status, gender/ gender identity)
2) Assess students' "level of comfort" in "aspects" of the learning environment (e.g., the content of the curriculum, the behavior of their peers, the faculty/staff/instructors); and
3) Assess how students may have a better understanding of others' perspectives and greater clarity of their own perspectives based on experiences in the learning environment.

Results:
Differences in distributions were computed using Mann-Whitney U tests, alpha < .05. Of students asked, 77.7% completed the survey (n=88) in August 2020. 51.1% of the respondents were female, 17.0% were URM. URM students indicated they felt uncomfortable more frequently than non-URM students, due to: differences in race (U=328, p=.005); nation of origin (U=347.5, p=.001); the content of the curriculum (U=302.0, p=.001); and the behavior of their peers (U=357.5, p=.020). Females felt uncomfortable more frequently than males due to the behavior of their peers (U=720.5, p=.022).

Conclusions:
These data indicate that the instrument can detect disparities in students' experience of the social environment of medical education microclimates. This offers opportunities to establish quality improvement processes and improve students' experience of inclusion.

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Mental Hesitation: A Qualitative Exploration of Pediatric Subspecialists' Perceived Responsibilities and Barriers to Addressing Mental and Behavioral Health

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Region: NEGEA

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Abstract Body:

Research Statement/Research Question:
To describe pediatric subspecialists' experiences providing mental and behavioral health (MBH) care to better understand their perceived responsibilities (RESPONSIBILITY) and barriers (BARRIER) to addressing MBH, to ultimately guide further educational interventions.

Background and relevance of the study:
Children with chronic medical conditions (CMC) are disproportionately affected by MBH issues as compared to their healthy peers. Pediatric subspecialists are urged to address their patients' MBH concerns; however no competencies exist to guide pediatric subspeciality education. Reasons why pediatric subspecialists believe less strongly than general pediatricians that they should address MBH issues and screen less frequently are not yet known.

Design and Methods:
As part of an explanatory mixed methods study, 19 one-on-one semi-structured interviews and two 4-person focus groups with pediatric subspecialty faculty and fellows were conducted from November 2019-June 2020 at Yale University. Transcripts were independently reviewed and coded with a priori and emergent codes. Thematic inductive analysis was used to identify common themes among interviews.

Results:
RESPONSIBILITY themes included: obligation to identify and refer but not treat MBH concerns; differing roles based on practice setting and frequency of patient visits; and concern for mismanagement of MBH issues. BARRIER themes included: competing priorities; perceived MBH stigma among patients and families; lack of training; and lack of awareness and access to MBH resources.

Conclusions:
Pediatric subspecialists believe they should address MBH concerns in a limited manner. They worry they will improperly address MBH concerns and also inadequately address a patient's additional subspecialty care needs. To improve the quality of care delivered to children with comorbid CMCs and MBH concerns, subspecialty MBH competencies should be clearly defined. Additional training can then be tailored to the needs identified: (1) instructing subspecialists on the importance of addressing MBH within subspecialty clinics and their role, (2) improving subspecialists' skills and providing subspecialty-specific MBH resources, and (3) addressing the perceived burdens of limited time and MBH stigma.

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Penn Access Summer Scholars Program: A Mixed Method Analysis of a Virtual Offering of the Program

Submission Type: Research Abstract
Accepted as: Oral Presentation
Region: NEGEA

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Abstract Body:

Research Statement/Research Question:
Racial and ethnic minorities continue to be underrepresented in medical school matriculants and in the physician workforce. Efforts to addresses these disparities have led to establishment of summer pre-medical enrichment programs at large, research-focused medical centers, targeting undergraduate students from groups underrepresented in medicine (URM). Although their effectiveness has been demonstrated, the costs and logistics associated with onsite programing represent potential barriers to the establishment of more of these types of enrichment programs.

Background and relevance of the study:
The Penn Access Summer Scholars (PASS) program at the Perelman School of Medicine (PSOM) targets URM undergraduate students, providing two consecutive summers of mentored research and enrichment experiences, with the goal of enabling participants' matriculation to PSOM. PASS has been an on-campus experience, but during summer 2020 virtual programming was provided due to the COVID-19 pandemic. Outcomes from the delivery of PASS as a virtual experience are presented, findings with implications for increasing the availability of these enrichment programs.

Design and Methods:
Participants in the summer 2020 virtual offering of PASS completed pre- and post-program surveys that included 5-point Likert-style and open-ended questions to determine the impact of the programing on self-assessments of participants' research skills, familiarity with the physician identity, and preparedness to be a PSOM student. Post-program, participants also assessed program administration and content.

Results:
Participants reported significant increases in their self-reported confidence in doing research, understanding of physician identity, and sense of preparedness for PSOM. The educational value of the program content, their level of engagement in the program and the overall quality of the program was rated as excellent or outstanding by large majorities of respondents. Content analyses of participant comments were consistent with these quantitative results.

Conclusions:
A pre-medical summer enrichment program targeting URM undergraduates can be successfully conducted virtually to achieve program objectives and may increase access to these types of physician pipeline initiatives.

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Examining the Impact of Blinding on the Assessment of Residency Selection Interviews

Submission Type: Research Abstract
Accepted as: Oral Presentation
Region: NEGEA

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Abstract Body:

Research Statement/Research Question:
This mixed methods study examined the impact of blinding on how a residency program evaluated candidate interviews.

Background and relevance of the study:
Residency programs place significant weight on the interview as a selection tool due to its ability to reveal psychosocial qualities.[1,2] However, candidates' academic metrics can bias interviewers' assessments,[3-6] lessening the diversity and inclusivity of residencies. Blinding interviewers to academic metrics is an important potential intervention for mitigation of this bias.

Design and Methods:
During the 2019-2020 residency selection season in the Department of Anesthesiology & Critical Care at the University of Pennsylvania, we randomized interview days to half blinded and half unblinded. On blinded days, interviewers did not receive applicants' USMLE scores, transcripts, or MSPE letters. Independent ratings for all interviewees were collected from faculty interviewers. Consensus ratings subsequently established by committee were collected. Rating outcomes were compared statistically. Committee meetings were audio-recorded, transcribed, and qualitatively coded.

Results:
There were no significant statistical differences in candidate rating outcomes between blinded and unblinded days. Qualitative analysis showed that on blinded days, committees spent more time discussing applicants' personality attributes and were focused less on identifying "red flags" in candidates' academic files, and interviewers were less likely to alter impressions after interviews due to having weaker predispositions about applicants. However, interviewers framed their lack of information about academic metrics as a caveat to their assessments and still formed presumptions about candidates' academic performance.

Conclusions:
Blinding had desirable effects on how committees discussed interviews, lessening their fixation on academic metrics instead of psychosocial qualities. However, interviewers still anchored their assessments to presumed academic performance despite not having access to common metrics, which may have contributed to blinding's lack of statistical effect. These findings suggest that blinding alone

may not be sufficient to consistently eliminate interviewers' tendency to bias assessments based on academic records.

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Childcare Insecurity as a Driver of Burnout in Pediatric Fellows

Submission Type: Research Abstract
Accepted as: Oral Presentation
Region: NEGEA

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Abstract Body:

Research Statement/Research Question:
The objectives of this study are to describe childcare strategies and challenges among fellow-trainees, assess financial burden of childcare, and explore childcare-related stress as a driver of burnout.

Background and relevance of the study:
Trainee burnout is recognized as a significant issue in medicine. A growing body of literature demonstrates the impact of breastfeeding1, pregnancy,1,2 and parental leave3,4 on trainee well-being, however there are few studies examining childcare2,5,6 despite the frequency of in-training parenthood.7 No studies to-date have explored the relationship between childcare, finances, and burnout. Trainees face unique childcare-related challenges, including separation from family/social networks, long and irregular hours, and a high debt-to-income ratio. All these issues have been heightened in the context of COVID-19.

Design and Methods:
We designed an online survey of fellows at our tertiary-care children's hospital using literature review, key informant interviews, and iterative pilot testing. The survey will be sent to all 300 fellows in our hospital, including fellows without children, who will serve as controls. The survey includes questions about demographics, training program features, debt burden, childcare strategies and stressors, and a validated 2-item burnout measure.

Results:
Data collection is ongoing. We will report demographics of respondents including a financial profile with average childcare costs relative to total household income and debt. We will present program features such as call participation and weekly work-hours, and a detailed description of childcare strategies and stressors. We will present burnout rates among those with and without children, and in groups with different income-to-debt ratios.

Conclusions:
We hope to draw conclusions about childcare strategies and challenges of trainees, and to elucidate the role of these issues in burnout. Our long-term objective is to create foundational research on this topic, and to broaden our scope to include resident trainees locally, and resident and fellowship trainees nationally

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How does having a physician-parent influence interview invitations and admittance to the Larner College of Medicine?

Submission Type: Research Abstract
Accepted as: Oral Presentation
Region: NEGEA

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Abstract Body:

Research Statement/Research Question:
Does having a physician-parent correlate to receiving an interview and acceptance offer to the Robert Larner, M.D. College of Medicine (LCOM)?

Background and relevance of the study:
The purpose of this study was to ascertain the correlation between medical school applicants with at least one parent physician and interview invitations and admissions prospects to LCOM. This study may disclose a potential selective advantage of having parents in medicine.

Design and Methods:
We examined 14,664 total LCOM applicants from 2018 – 2020. 3,285 withdrew before an interview determination. As a result, this analysis included 11,379 applicants. Furthermore, we looked at the 1,730 applicants who received an interview during that same period. Of these, 36 withdrew before an admission decision. Therefore, this analysis included 1,694 applicants. We categorized the professions of applicants' parents into the following: physician, non-physician clinical, and healthcare nonclinical. We used a chi-square test to analyze the data.

Results:
There is no statistical significance between parent profession of applicants receiving interviews or admittance into LCOM when variables such as admissions docket, GPA, MCAT score, and CASPer score are controlled. Applicants with physician parents make up 20.5% of the total number of applicants invited to interview vs. 18.5% of the total cohort which applied, a difference which is not statistically significant when other factors are controlled. Applicants with physician parents make up 20.4% of all those who received interview offers and make up 20.9% of those admitted to LCOM, a non-statistically significant difference.

Conclusions:
The results suggest that a physician-parent profession does not confer selective advantage for LCOM interview invitations or admittance. Further studies can investigate if parent profession influences applicant decisions to apply to medical school or whether clinical exposure and opportunities make applicants more competitive.

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NBME Shelf Exam Score Stability after transition from 4-week to 2-week Neurology Clerkship Case-based Flipped Classroom Virtual Curriculum in the COVID-Era

Submission Type: Research Abstract
Accepted as: Oral Presentation
Region: NEGEA

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Abstract Body:

Research Statement/Research Question:
Do neurology clerkship NBME shelf exam scores differ for students taking the exam after a 2-week remote curriculum with NO PATIENT CARE compared to students taking the exam after 4-week curriculum of both didactics & direct patient care.

Background and relevance of the study:
There are mixed conclusions from studies on decreasing clerkship duration reducing NBME shelf scores. We hypothesized shelf scores would be similar taking the shelf exam after a shorter didactic rotation without patient care.

Design and Methods:
In April 2020 due to the COVID-19 pandemic, the neurology clerkship at Rutgers RWJMS switched from a 4-week clerkship (patient care with didactics) to a structure of 2-weeks virtual-only flipped classroom case-based didactics. Students were offered the opportunity to take the shelf exam after the 2-week virtual curriculum without starting the patient care portion. Exam scores for this 3-month cohort were compared to students in the earlier 4-week combined experience rotation (traditional) from July 2018 - March 2020.

Results:
323 took the shelf exam between July 2018 & June 2020. 43 of 68 (63%) of students chose to take the exam before starting the required clinical rotation. Mean score for the 323 students was 81.7 ± 6.5 (mean ± sd). 281 students took the exam after the traditional 4-week rotation in the 2018-2020 academic years (AY). Mean scores did not differ between these 281 students and the 2-week didactic-first group (81.7 ± 6.5 traditional vs 80.9 ± 6.6 virtual, p=0.43). Sensitivity analysis showed no differences when comparing the 2-week group to the traditional group 2019-2020 AY or comparing it to the last quarter of the 2018-2019 AY traditional group.

Conclusions:
Taking the neurology clerkship exam after a 2-week flipped classroom case-based curriculum without patient care did not significantly affect scores compared those in the past 2 years taking the exam after the traditional 4-week didactic plus patient care rotation.

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Utilizing Case-Based Learning to Enhance Recognition of Food Insecurity by Medical Students

Submission Type: Research Abstract
Accepted as: Poster
Region: NEGEA

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Abstract Body:

Research Statement/Research Question:
Case-based and team-based application exercises will increase clerkship medical student confidence in screening for food insecurity and improve student awareness of disparities in accessing nutritious foods.

Background and relevance of the study:
Food Insecurity is not routinely taught in clerkship medical education and yet an estimated 28% of households with children are food insecure[1] (that is, have limited access to adequate food) where Black, Latinx, and Native American households are more likely to be affected[2]. Inadequate nutrition has been associated with adverse health outcomes in children[3] and several chronic illnesses[4]; the need for increased recognition of food insecurity by clinicians is urgent.

Design and Methods:
Between July and November 2020, 104 clerkship students were offered two 90-minute nutrition sessions at a single medical school, hosted on the Zoom platform. These consisted of an 'Introduction to Nutrition' lecture and case-based application exercises, including virtual grocery shopping on a restrictive budget and a role play case to assess a family for food insecurity. Students received peer feedback using a standardized rubric and an index of resources for food-insecure individuals. A survey administered before and after the sessions assessed knowledge and student confidence via likert scale. Statistical significance was determined at $P < .01$ and measured using the Wilcoxon signed-rank test.

Results:
82/104 (78%) students attended both the lecture and application exercise sessions; Of those students, 100% completed both pre- and post-test surveys. Pre-session knowledge was high and not significantly impacted by the sessions. However, students reported significantly increased post-test confidence in understanding food security, determining if a patient is at risk for food insecurity, and teaching grocery shopping on a budget. 61/82 (74%) students agreed that they would utilize the session information in the future.

Conclusions:
A single two-part nutrition session significantly improved clerkship student confidence in understanding and screening for food insecurity and could have lasting impacts on a cohort of future physicians.

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The Academic Front Line: A Survey Evaluating the Impact of Anti-Racism Events and Service on Black Medical Students

Submission Type: Research Abstract
Accepted as: Poster
Region: NEGEA

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Abstract Body:

Research Statement/Research Question:
To characterize Black medical students' participation in initiatives for racial equity and to assess the academic impact and perceived merits of their institutional service.

Background and relevance of the study:
Anti-racist initiatives have recently grown as a result of continued police brutality and racism against Black Americans[1,2]. Historically, medical students are significant contributors to social activism in medicine, and minority students may additionally feel an increased obligation to participate[3,4]. However, it is currently unclear how this service among minority students may increase "the minority tax" and limit bandwidth for other academic endeavors[5,6].

Design and Methods:
A 39-item survey was distributed online to members of Student National Medical Association (SNMA). The study periods of interest were prior to and during the time of mass social movements for racial justice following June 2020 [7]. The survey collected participants' demographic background, time commitments to academic/diversity activities, perceptions of academic performance, and motivations/perceptions for participating in such initiatives.

Results:
Responses from 463 survey participants were included. Since June 2020, weekly time spent on clinical rotations (M=9.9 hr vs. M=11.5 hr, $p=0.003$), town halls (M=4.2 hr vs. M=5.0 hr, $p<0.001$), and service/extracurriculars related to racial diversity increased (M=4.7 hr vs. M=5.7 hr, $p<0.001$), whereas time spent on classroom-based coursework decreased (M=8.9 hr vs. M=8.0 hr, $p=0.029$). Respondents reported that recent participation in diversity initiatives prevented them from pursuing coursework ($p<0.001$), negatively impacted their academic performance ($p<0.001$), and has not been viewed as equally meritorious when compared to other student activities ($p<0.001$). Students also indicated that they felt it was more important now to participate in diversity and inclusion events ($p=0.02$).

Conclusions:
Black medical students report that the recent anti-racism movements have influenced their academic time-commitments, and participating in service for racial equity has negatively impacted their academic success. Institutions should be aware of this tax on Black students and recognize the merits of this advocacy work.

References:

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Integration of Narrative Medicine into Primary Care Residency Curricula Improves Resident Connectedness

Submission Type: Research Abstract
Accepted as: Poster
Region: NEGEA

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Abstract Body:

Research Statement/Research Question:
Objective 1: To determine the effects of introducing a Narrative Medicine (NM) curriculum into the Primary Care curriculum on resident wellbeing.
Objective 2: To explore the most impactful components of a NM curriculum on resident experiences.

Background and relevance of the study:
Narrative Medicine (NM) is a novel activity that has been shown to combat burnout in learners by providing the opportunity for reflection and normalization of traumatic experiences during training. In this study, a narrative medicine curriculum was introduced into the Primary Care residency curriculum in an effort to study the effects of NM on resident wellbeing and social connectedness.

Design and Methods:
Each Primary Care resident participated in a total of 4 one-hour NM sessions in protected didactic time. Each of the sessions focused on a different theme or topic. Residents spent 5-7 minutes writing in response to the prompt, then shared their writing with the group, and completed an anonymous evaluation.

Results:
Residents were given a survey using a Likert scale of (1) not at all useful to (5) extremely useful. The majority of residents rated the sessions 4-5/5 in terms of the effectiveness of using pieces of literature and art for reflection. All residents rated the group discussion portion as extremely useful (5/5). Interestingly, the writing component of the sessions were considered to be least useful for reflection. The majority of write-in comments stated that sharing stories and experiences as the most valuable aspect of this curriculum. Residents stated that “discussing and debriefing” and “hearing and sharing experiences” with their peers was a unique component of narrative medicine and provided them with the ability to increase their emotional connectedness to each other.

Conclusions:
Our study suggests that the opportunity for residents to reflect on experiences with their peers through storytelling was the most valuable component of the novel integration of narrative medicine into traditional residency curricula.

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The FOCUS Medical Student Fellowship: Developing leadership in women's health & gender-based medicine research

Submission Type: Research Abstract
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Region: NEGEA

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Abstract Body:

Research Statement/Research Question:
What impact does the FOCUS on Health & Leadership for Women (FOCUS) Medical Student Fellowship (MSF) in women's health and gender-based medicine have on recipients' scholarship and future academic careers.

Background and relevance of the study:
Medical student research training is critical for developing future women's health leaders who are adept at conducting high-impact research. This study explores the association of an innovative medical student experience in women's health and gender-based medicine research on subsequent fellowship-related publications and career outcomes, contributing to the body of knowledge on the influence of a mentored research leadership program for medical students on academic professional development.

Design and Methods:
Targeted searches of fellowship recipients and their fellowship mentors were conducted in PubMed and Scopus from 2001–2017. Prior student fellows were also contacted to assess whether they held academic positions.

Results:
Since 2001, funds have been secured to support a total of 83 students (69 women, 14 men) in a mentored research experience in women's health and gender-based medicine. In total, 48 out of the 83 (57.8%) medical student fellowship recipients published at least one peer-reviewed research paper or scientific review related to their research project. Of the 50 prior recipients with a least five years of follow-up data (41 women, 9 men), 26 (52%) were in academic careers.

Conclusions:
The FOCUS MSF program is a model of research training and career mentoring associated with markers of leadership, academic success, and proclivity. This unique research experience provides medical students with the opportunity to gain knowledge, skills, and confidence to not only perform high-quality women's health research but also critically evaluate gender-based biological and social differences and apply inferences in their research and clinical careers. Programs such as the FOCUS MSF could be developed at other institutions to promote interest and skills in women's health and gender-based medicine.

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Associations of personality and perceptions of online learning in students required to transition compared to those who chose online learning

Submission Type: Research Abstract
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Region: NEGEA

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Abstract Body:

Research Statement/Research Question:
Do associations between personality type and perceptions of online learning differ between students who were forced to transition to online learning versus those who chose online coursework?

Background and relevance of the study:
Online medical education may persist during the COVID-19 pandemic and years following. Literature suggests that student perceptions of online learning differ based on personality and motivation for online coursework (Keller, 2013; Rios, 2019). Understanding associations between personality and perceptions may assist faculty in preparing successful online curriculums.

Design and Methods:
We surveyed the medical student class of 2022, who were forced to transition to online learning during the pandemic, medical student class of 2024, who expected some online learning due to the pandemic, and Master of Public Health (MPH) students, who chose a fully online program and are the comparison group. Participants responded to validated survey instruments regarding personality type (John, 1991, 2008) and perceptions of online learning (Keller, 2013).

Results:
We received 116 responses (co2022: 33, co2024: 45, MPH: 38). Significant differences in perception of online courses were seen between all cohorts, with co2022 having the least favorable perceptions and MPH students having the most favorable (co2022: $\beta=-1.37$ $p<.01$; co2024: $\beta=-.81$, $p<.01$; MPH: Ref). Among MPH students, conscientiousness was positively correlated with engagement in ($R=.35$, $p=.03$) and perceived value from ($R=.37$, $p=.02$) online courses and negatively correlated with anxiety and frustration with online courses ($R=-.34$, $p=.03$). No personality and perception correlations were seen in co2022 or co2024.

Conclusions:
The varied findings between MPH and medical students indicate differences between students who chose online learning compared to those forced to transition. The lack of associations between personality and perceptions of online learning for medical students suggests other mechanisms affect their perceptions, but more research is needed. Recognizing areas in which medical students negatively perceive online learning may support efforts to enhance their learning while online education persists.

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Comparison of exam performance between problem-based learning and non-problem based learning questions

Submission Type: Research Abstract
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Region: NEGEA

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Abstract Body:

Research Statement/Research Question:
How does exam performance compare between problem-based learning (PBL) and non-PBL learning objectives?

Background and relevance of the study:
Problem Based Learning (PBL) was employed for all incoming students in 2019 (n=24) at New York University Long Island School of Medicine (NYULISOM) to meet the Liaison Committee for Medical Education self-directed, life-long learning standards. Because NYULISOM is a three-year accelerated curriculum, learning objectives (LOs) placed in PBL sessions were predominantly exclusive to PBL, and not taught in any other non-PBL sessions. Most curricula that use PBL embed learning objectives in their PBL sessions but these LOs are typically supportive of LOs that have been (or will be) delivered in non-PBL sessions. Conflicting data exists regarding the efficacy of learning content exclusively in a PBL format. Comparing student exam performance on PBL versus non-PBL LOs may suggest that students can successfully acquire knowledge from LOs exclusive to PBL without additional non-PBL time dedicated to the same LOs.

Design and Methods:
Every 2 weeks, USMLE-style multiple choice exams are given with questions from both PBL and non-PBL sessions. These questions are based on the LOs for each session and are tagged as being from a PBL or non-PBL session. Performance on all PBL-tagged questions (n=28) and 28 randomly chosen non-PBL questions were extracted from the basic science curriculum. A paired t-test was performed comparing student performance on PBL versus non-PBL questions. Question quality was assessed using an unpaired t-test on point biserial values between PBL versus non-PBL.

Results:
There was no significant difference in question quality between PBL and non-PBL questions ($p=0.29$). Student PBL performance (mean = 83.1%, SD = 14.8%) was significantly higher than non-PBL performance (mean = 78.0%, SD = 17.1%), $p=0.009$.

Conclusions:
Student performance on PBL-exclusive LOs was better than performance on non-PBL LOs indicating successful acquisition of knowledge from content delivered exclusively in a PBL format.

References:
N/A

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A Silver Lining of COVID-19 – Innovations Within Internal Medicine Residency Programs and Increased Resident Wellness

Submission Type: Research Abstract
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Region: NEGEA

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Abstract Body:

Research Statement/Research Question:
This study asked, "how did COVID-19 and pandemic-related program changes affect internal medicine residents' wellness?"

Background and relevance of the study:
Burnout is associated with negative health and workplace outcomes.1 It is estimated that 46% of healthcare workers experience burnout, with residents displaying greater proportions of burnout than medical students, fellows, and attendings.2-4 The COVID-19 pandemic may have heightened the risk of resident burnout by introducing new stressors.

Design and Methods:
In academic year 2019-2020, 394 residents from four internal medicine residency programs in the Northeast were invited to participate in 18 surveys on wellness, receiving open-ended survey prompts about every two weeks. In March 2020, the prompts were refocused on COVID-19. Data from four COVID-19-related prompts were coded by four trained coders, using content analysis techniques.

Results:
A total of 186 residents expressed interest in participating; 88 were randomly selected to enroll. The average response rate was 89%. The results revealed four main themes. First, the early days of the pandemic were fear- and anxiety-provoking for residents; they worried about availability of PPE, passing COVID-19 onto family members and patients, and the uncertainty of the future. Second, program changes such as work from home were unsettling initially, but soon the residents appreciated the time to virtually socialize, exercise, rest, and reflect. Third, the residents felt confusion and frustration with communication from program leaders in the early days, but administrative leaders quickly adapted to increase the frequency and clarity of COVID-19 messaging. Fourth, most residents expressed gratitude for program innovations made in response to COVID-19, including shorter shifts, the removal of pre-rounding, and the use of telemedicine.

Conclusions:
The COVID-19 pandemic added many challenges to residency programs and stressors to residents. In response, residency program leaders implemented systemic innovations like improved communication, favorable schedules, and more flexible learning options that boosted resident wellness.

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Assessing medical students motivations for, and the effects of, virtual and in-person volunteering during the COVID-19 pandemic

Submission Type: Research Abstract
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Region: NEGEA

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Abstract Body:

Research Statement/Research Question:
This study investigates the motivations behind medical students participating in volunteering and explores the protective nature of volunteering on student wellbeing and social-emotional capabilities.

Background and relevance of the study:
Medical students with high levels of exhaustion, overall burnout, and lower GPAs are less involved in extracurricular activities, implying a potential role for volunteering in mitigating the effects of student stress (Shadid et al., 2020). Understanding students' motivations for volunteering could provide insight into its perceived utility and allow medical schools to assess the impacts of volunteering. The effects of virtual and in-person volunteering or student motivation to volunteer during a time of excess stress (i.e. the COVID-19 pandemic) is not yet known.

Design and Methods:
An anonymous survey was administered between March-May, 2020 to all enrolled medical students. Motivations to volunteer were assessed by the validated Volunteer Functions Inventory (VFI). Impact was assessed by yes/no questions on whether volunteering during the COVID-19 crisis affected biopsychosocial measures.

Results:
A total of 94 students completed the survey. Volunteering increased self-perceived empathy, compassion, resilience, and ability to cope with COVID-19 in 62.7%, 80.4%, 68.6%, and 80.4% of M1-M4 students respectively. High VFI Values subscale scores were seen, indicating that motivations to volunteer were based on altruistic and humanitarian concerns. Student volunteers who stated increased self-perceived levels of empathy, resilience, and an ability to cope with COVID-19 had significantly higher VFI Values scores ($p=0.024$; $p<0.001$; and $p=0.046$ respectively). A higher percentage of volunteers who had patient contact (75.8%) reported an increase in empathy than those who did not (35.3%, $p=0.012$).

Conclusions:
Results support the positive impact volunteering has on the subjective experiences of medical students at the height of the initial COVID-19 wave. Motivations for volunteering might mediate the types of volunteering that students participate in, as well as the potential benefits of volunteering.

References:
Shadid, A., Shadid, A.M., Shadid, A., Almutairi, F.E., Almotairi, K.E., Aldarwish, T., Alzamil, O., Alkholaiwi, F., & Khan, S.-U.-D. (2020). Stress, Burnout, and Associated Risk Factors in Medical Students. Cureus,12(1): e6633. https://doi.org/10.7759/cureus.6633

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Effects of Pass/Fail Grading on Clerkship NBME Subject Exam Performance

Submission Type: Research Abstract
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Abstract Body:

Research Statement/Research Question:
Does pass/fail grading on the NBME Subject Examination (SE), rather than the actual score as a component to final clerkship grade, affect SE performance?

Background and relevance of the study:
Curricular redesign forced clerkship duration change to avoid overlapping student cohorts. Surgery, Pediatrics, Obstetrics/Gynecology, Psychiatry, and Family Medicine Clerkships were reduced from 6 to 5 weeks, and Internal Medicine from 8 to 6 weeks. To increase student receptivity to this change, grading changed to require passing SE rather than the actual score as a fraction of a final grade. Previous studies demonstrated that clerkship duration does not affect SE performance (1,2).

Design and Methods:
We analyzed exam performance during the intervention year (AY19) as compared to two previous years and included first-time test takers of SE, excluding students who were missing at least one SE score (N=756). The cohorts were created based on the academic year in which the shelf exams were taken. Welch's T-test with the Tukey-Kramer correction was used to determine group differences in performance on USMLE Step1, SE, and Step 2 CK.

Results:
There was no difference among cohorts' USMLE Step 1 scores, suggesting groups were similar before starting clerkships. While scores for all six clerkship SE decreased during the intervention year, only Internal Medicine and Obstetrics/Gynecology SE scores were significantly lower for AY18 vs AY17 and AY18 ($p<0.001$ for each). Psychiatry SE scores were also lower (AY19 vs AY17, $p=0.005$, and AY18, $p<0.001$), but there was also a difference between AY17 vs AY18 ($p=0.00$), confounding this finding. Step 2 CK performance did not differ among 3 cohorts.

Conclusions:
In student cohorts that are similar at baseline, pass/fail scoring might negatively affect the SE performance for some clerkships. However, this change does not affect Step 2 CK performance.

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Preparing for Residency Applications During COVID-19: Medical Student Experiences at a Single Institution

Submission Type: Research Abstract
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Abstract Body:

Research Statement/Research Question:
Our goal was to quantitatively describe the experiences of medical students applying to residency in the 2020-21 cycle given the impact of the COVID-19.

Background and relevance of the study:
During the pandemic, medical schools temporarily paused clinical rotations, away rotations were suspended, and residency interviews became virtual. Though all necessary to limit the spread of COVID-19—and to avoid inequalities with some regions being disproportionately impacted—these difficult decisions have had significant impact on students' perspectives on applying to residency [1].

Design and Methods:
An anonymous survey was distributed to students who were temporarily removed from clinical rotations, asking a variety of questions about their experiences outside of the hospital. Students graduating in 2021 were asked specifically about deciding on a specialty, away rotation plans, virtual residency interviews, and confidence in ability to match.

Results:
148 of 316 students (47%) responded. 71 were applying to residency this cycle. Without clinical experiences, "talking with residents or attendings" was the most common resource used to finalize specialty choice (54% of students). To keep up medical knowledge for eventual sub-internships, students found commercially available subscription services and question banks to be the most valuable. Most students had planned (55%) or at least considered (18%) away rotations. Regarding virtual interviews, the top concerns students endorsed were "not being able to get a feel for a program" (89%), "connecting with an interviewer and making a lasting impression" (79%), and "programs receiving more applications" (79%). Student confidence in matching (scale of 0-10) declined modestly from 7.6 ± 1.9 to 7.1 ± 2.3 after the pandemic ($p=0.03$).

Conclusions:
Students understandably have multiple concerns about the 2020-21 residency application cycle, particularly attempting to get a feel for a program virtually. Future studies are needed to determine the impacts, positive or negative, of virtual residency interviews, and how to best support students in a cycle complicated by a pandemic.

References:

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The Impact of Socioeconomic Factors on Medical School Acceptance Rates

Submission Type: Research Abstract
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Region: NEGEA

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Abstract Body:

Research Statement/Research Question:
To examine U.S. medical school acceptance rates across familial income and parental education levels and identify applicant factors predictive of medical school acceptance.

Background and relevance of the study:
Seventy-five percent of medical students hail from families in the top two income quintiles[1]. Characterizing bottlenecks along the pre-medical pipeline could inform initiatives that increase representation of medical school matriculants from all socioeconomic backgrounds[2].

Design and Methods:
AMCAS de-identified data were obtained for all medical school applicants from 2014-2019. Descriptive statistical analyses assessed acceptance rates, MCAT scores, and GPAs, stratified by applicant's family income and parents' education. Low-income was defined as reporting a childhood family income < $75,000, and first-generation status was defined as having no parent with a bachelor's degree. Multivariate regression analysis modeled effects of MCAT, GPA, race/ethnicity, first-generation status, and low-income status on acceptance to at least one MD program.

Results:
AMCAS data from 312,898 applicants were analyzed. The overall acceptance rate over the study period was 42.3%. Low-income applicants and first-generation applicants' acceptance rates were 36.0% (38,674/107,396) and 32.7% (19,701/60,328), respectively. On univariate analysis, acceptance was negatively associated with family income (OR: 0.602, p = < 0.001, CI: 0.592,0.612) and parental education (OR: 0.581, p = < 0.001, CI: 0.570,0.592). On multivariate analysis, among those with MCAT2015 scores (n = 142,961), medical school acceptance was most affected by average science GPA (OR: 6.63, p = < 0.001, CI: 6.345,6.918), UIM identity(OR: 5.119, p= < 0.001, CI: 4.923,5.323), and MCAT score (OR: 1.186, p = < 0.001, CI: 1.184,1.189). Low-income status (OR: 0.968, p = < 0.05, CI: 0.938, 0.999) was negatively associated with acceptance; however, first-generation status (OR: 0.994, p = < 0.758) was not associated.

Conclusions:
First-generation and low-income applicants experience lower medical school acceptance rates, but high grades and test scores mediate the effect, in combination with UiM status. These applicant populations deserve increased support and mentorship to achieve proportional representation amongst medical students.

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Project Inclusive Genetics: Exploring the impact of training on patient-centered counseling on physical disability bias in the prenatal setting

Submission Type: Research Abstract
Accepted as: Poster
Region: NEGEA

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Abstract Body:

Research Statement/Research Question:
The goal of this study was to explore the presence of bias against people with physical disability (PD) among a heterogeneous group of healthcare workers and trainees and to evaluate the effect of implicit association testing (IAT) and an educational module on this bias.

Background and relevance of the study:
Many studies have demonstrated that unconscious, or implicit, bias held by healthcare providers can negatively impact patient encounters. This phenomenon has been observed numerous times in the context of racial bias [1,2,3,4]. Importantly, previous studies examining racial and socioeconomic biases have shown effective educational interventions that decrease IAT scores, indicating a decrease in implicit bias [5, 6].

Design and Methods:
The study was composed of a one-hour web-based survey and an educational module on the principles of patient-centered counseling. The survey included an explicit disability bias assessment, disability IATs, demographic collection, and pre- and post- module clinical vignettes of prenatal patient scenarios. Participants indicated their personal preferences on genetic testing and termination as well as provided counseling to hypothetical patients.

Results:
Among the 335 participants, there were both explicit and implicit biases towards individuals with PDs. Prior to the educational module, when respondents were tasked with providing genetic testing recommendations, implicit biases and personal preferences for testing and termination influenced respondents' clinical recommendations. Having previous professional experience with individuals with disabilities diminished biased clinical recommendations prior to the intervention. In response to the IAT and educational intervention, the effect of implicit bias and personal preferences on clinical recommendations decreased.

Conclusions:
This study demonstrates how bias against a marginalized group exists within the medical community and that personal opinions can impact clinical counseling. Our findings suggest that there are strategies that can be easily implemented into curricula to address disability bias, including formal educational interventions and the addition of professional experiences into healthcare professional training programs.

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Comparison of Feedback Culture as Perceived by Pediatric Residents and Fellows at an Academic Institution.

Submission Type: Research Abstract
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Region: NEGEA

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Abstract Body:

Research Statement/Research Question:
What are trainee perceptions of feedback culture within the department of pediatrics at Yale?

Background and relevance of the study:
Effective feedback is essential for trainees to achieve clinical competence.[1] An unsupportive institutional feedback culture can diminish the credibility and uptake of feedback.[2]

Design and Methods:
A mixed methods analysis was conducted using triangulation of findings from quantitative and qualitative methods.[3] Pediatric fellows and residents were invited to anonymously complete a feedback environment survey (FES). The FES uses a 7-point Likert scale, measures seven constructs, and has demonstrated good reliability, internal structure and validity in an industrial setting.[4] Fellow and resident ratings were compared using two-sided Fisher's exact tests. Multivariable analyses used a linear regression model. Participants for the qualitative study were chosen using purposive sampling to achieve a representative mix of residents. Dedoose was used to organize and manage transcript data and guide analysis. The constant comparative method was used to incrementally code and categorize data and to arrive at themes.[5]

Results:
Fifty-two residents and 21 fellows completed the survey. In the bivariate analysis, fellow scores were more favorable for fellows compared to residents in the constructs of source credibility feedback quality, reinforcing feedback, constructive feedback, source availability, and promotion of feedback seeking (all $p<0.05$)). On multivariate regression analysis, GME program was independently associated with all constructs. Ethnicity and gender were associated with source credibility ($p= 0.0361$) and constructive feedback ($p=0.033$), respectively.

Semi-structured interviews were conducted with eight residents (4 females). Two main themes emerged; Efficiency in patient care compromises feedback quality and quantity and, a culture that prioritizes courtesy over candor impacts feedback.

Conclusions:
We have demonstrated deficiencies in the feedback culture in our GME programs, which are more pronounced in the residency program. Barriers caused by efficient patient care and a culture of courtesy explain some of these differences in feedback.

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Evaluating Medical Students Knowledge of and Attitudes towards Value-Based Healthcare Delivery Principles and the Choosing Wisely Initiative

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Region: NEGEA

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Abstract Body:

Research Statement/Research Question:
What are the current attitudes towards and knowledge of value-based healthcare delivery and Choosing Wisely Initiative among medical students?

Background and relevance of the study:
Healthcare is a major portion of the United States' gross domestic product. It is forecasted to grow by 5.4% annually and is expected to make up around 20% of the economy before 2030.1 Waste is estimated to account for approximately 30% of the aggregate national healthcare expenditure.2 Wasteful care is primarily attributable to physician decision-making.3 Physicians must learn how to focus their diagnostic tests to correctly manage the health of their patients without contributing to medical waste. Choosing Wisely is an evidence-based inter-specialty initiative designed to promote healthcare delivery. Examining medical student awareness of both Choosing Wisely and value-based healthcare delivery is important to informing the pedagogical approach and curricular content necessary for training resource conscious physicians.

Design and Methods:
An IRB-approved survey with questions evaluating medical students' knowledge and attitudes towards the Choosing Wisely Initiative and value-based healthcare delivery principles. was distributed to all students (n=1,092) at Sidney Kimmel Medical College (SKMC) between June and August 2020.

Results:
Approximately 35.6% medical students (n=392) responded. Baseline awareness of Choosing Wisely for first-year students was 27.3% with 96.0% of fourth-year medical students reporting awareness. Perception of healthcare delivery waste was noted to either be a somewhat serious problem (62.0%), very serious problem (33.9%), or not too serious a problem (3.8%). Only 49.5% of students correctly approximated the amount of healthcare expenditure associated with waste, while 74.7% correctly attributed this waste to unnecessary provision of healthcare services.

Conclusions:
Modifications to the SKMC didactic curriculum are being developed to provide education on the critical role physician decision-making plays in reducing healthcare waste. Future work includes further multimodal curricular integration of Choosing Wisely concepts and re-administration of the survey to monitor efficacy.

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"Just Do It": Experiential Learning Opportunities Fill the Educational Gap for Pediatric Residents Caring for Patients with Mental Health Concerns

Submission Type: Research Abstract
Accepted as: Poster
Region: NEGEA

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Abstract Body:

Research Statement/Research Question:
This study sought to explore practicing pediatricians' perspective on their experience in residency training and how those experiences have impacted their current practices treating mental health issues.

Background and relevance of the study:
Less than half of the nearly 20% of U.S. children and adolescents in need of mental health care receive it, leading to pediatric Primary Care Providers filling the void despite self-reported lack of training and comfort providing mental health care. To address the shortage, based on experiential learning theory, we implemented an integrated mental health clinic (IMHC) in 2016 staffed with a Child and Adolescent Psychiatrist specifically for training pediatric residents during their own continuity clinic. No study yet has examined how this type of training model may fill this educational gap.

Design and Methods:
We performed a qualitative study of practicing pediatricians in a variety of clinical practice locations who are all graduates of a single pediatrics residency training program. The purposefully sampled set included graduates with a range of exposure to the IMHC. A total of 11 semi-structured interviews were conducted, and anonymous transcripts were iteratively analyzed and coded using the Consensual Qualitative Research (CQR) method until thematic saturation was reached.

Results:
Despite the range of experiences during residency, all participants endorsed experiential learning as the most effective way to learn to care for patients with MH issues and was associated with confidence and ownership. Other themes emerged which illustrated factors that impact learning: both external factors, such as necessity (there is no one else) and institutional culture, and internal factors, such as personal wellness (personal MH issues or burnout) and personal experiences (loved ones with MH issues), impacted motivation and engagement with the learning.

Conclusions:
Interventions to address the educational gap for pediatricians caring for patients with MH concerns should utilize experiential learning models, and should address external/internal factors that can motivate or demotivate learning.

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Influence of Trainee Ethnicity & Race on Assessment in Graduate Medical Education (InTERsect) study

Submission Type: Research Abstract
Accepted as: Oral Presentation
Region: SGEA

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Abstract Body:

Research Statement/Research Question:
How does resident race influence assessment in graduate medical education?

Background and relevance of the study:
There is a critical need to ensure equitable assessment practices in medical education. While attention has focused on how gender influences assessment, there is a lack of evidence focused on how race and ethnicity may influence assessment.

Design and Methods:
We performed a multi-site, retrospective, cross-sectional study of faculty evaluations of IM resident performance during inpatient ward rotations from at 6 US IM residency training programs. We assessed the influence of resident race on ratings adjusting for baseline ITE score.

Results:
Data included 3,600 evaluations by 605 faculty (52% men, 48% women) of 703 residents (55% men, 45% women) including 94 (13.4%) underrepresented in medicine (URiM) residents and 609 (86.6%) not underrepresented in medicine (Non-URiM) residents. Resident race was a significant factor associated with evaluation scores in all six core competencies. URiM resident scores were lower than Non-URiM residents scores in PC (mean adjusted standardized scores (SE) URiM 0.024 [0.04] vs NonURiM 0.156 [0.03], p=0.003), MK (-0.014 [0.05] vs 0.139 [0.03], p=0.001), SBP (-0.197 [0.05] vs 0.019 [0.03], p<0.001), PBLI (-0.082 [0.05] vs 0.100 [0.03], p<0.001), PROF (-0.088 [0.05] vs 0.098 [0.03], p<0.001), and ICS (-0.039 [0.05] vs 0.118 [0.03], p=0.002). The interaction of resident race/ethnicity with resident PGY and gender was not significant. However the association between resident race/ethnicity and faculty gender was significant in five of six core competencies with lower scores for URiM residents seen from men faculty.

Conclusions:
In this multi-site quantitative study of the influence of resident race and ethnicity in assessment, findings indicate that resident race/ethnicity was a significant factor influencing evaluation scores with URiM residents' scores lower than scores of Non-URiM residents. Faculty gender was a notable factor associated with these differences with lower scores for URiM residents noted from men faculty.

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Revealing and Dismantling Supremacy Culture in Medical Education

Submission Type: Research Abstract
Accepted as: Oral Presentation
Region: SGEA

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Abstract Body:

Research Statement/Research Question:
This study analyzes medical students' peer-to-peer comments posted amid the sweeping changes to medical education during the COVID-19 pandemic and models discourse analysis of critical incidents to identify and resist characteristics of supremacy culture.

Background and relevance of the study:
Mechanisms of oppression go unexamined, unnamed, and unquestioned in the attitudes, behaviors, pedagogies, and practices of medical education. Supremacy culture asks us to ignore them, excuse them, value them, and protect them. Since they feel "normal" and familiar, capitalizing on unusual circumstances and unfamiliar methods may provide new routes toward equity, diversity, justice and inclusion.

Design and Methods:
We collected 5,460 Covid-related r/medicalschool Reddit posts made from 3/12/2020-4/16/2020 and used Okun's (2007, 2013) framework to focus on discourse incidents displaying characteristics "complicit in and/or actively contributing to perpetuating norms and behaviours" of supremacy culture (COCo, 2019, p. 7). We then applied Critical Incident Analysis (Tripp, 1993)--a method for unpacking "underlying trends, motives and structures" in "commonplace events that occur in professional practice" (p. 23-24). Critical incidents "trigger insights about some aspect of teaching and learning" (Richards & Farrell, 2010, p. 13) and provided focal points to begin questioning patterns of iniquity inherent in our own pedagogy and "norms" of medical education.

Results:
Findings revealed myriad incidents of students opting to study for exams over assisting in the pandemic response and aligned with Okun's characteristics of supremacy culture. These results are indicative of a medical education learning environment where students experience tensions between perceived pathways to academic success and preparation to be compassionate and entrustable clinicians.

Conclusions:
Identifying and deliberately resisting the reinscription of supremacy-supporting mentalities will require medical education to prioritize learning opportunities that better reflect the realities of practice and eschew the transactional and score-focused demonstrations of factual knowledge acquisition and reproduction that support supremacy culture in medicine.

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Changes in Perception from Preclinical to Clinical Years on Medical School Experiences

Submission Type: Research Abstract
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Region: SGEA

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Abstract Body:

Research Statement/Research Question:
To detect within-person changes on end-of-year surveys as students transitioned from second to third year of medical school.

Background and relevance of the study:
Medical schools monitor student perceptions of the learning environment as they progress through undergraduate medical education(1). Reasons for such monitoring include continuous quality improvement, accreditation requirements, and internal program evaluation(1,2). Medical education would benefit from framing assessment of the learning environment as an intersection of psychosocial factors (e.g., curriculum resources, structure, policies, instruction) and material dimensions (e.g., physical and virtual spaces)(3).

Design and Methods:
Year-end surveys were electronically sent to all students at our medical school between July-August of 2018 and 2019. Our study focused on students who completed a survey in both administrations. 74 closed-response items (4-point Likert:1=Very Dissatisfied,4=Very Satisfied) overlapped between the two survey administrations. Questions were drafted based on the LCME Sample Student Opinion Survey, and for curriculum evaluation. Wilcoxon Signed Ranks Tests detected within-person changes.

Results:
132 of 192 students met inclusion criteria. Compared to MS2 year, students' satisfaction significantly decreased with access to secure storage space for personal belongings on campus ($Z=-3.34, p<.01, r=0.30$) and with foundational science instruction during the preclinical curriculum ($Z=-2.48, p=.01, r=0.26$) at the end of their MS3 year. Conversely, compared to MS2 year, students' satisfaction significantly increased at the end of MS3 with adequacy of counseling about elective choices ($Z=-2.86, p<.01, r=0.40$) and adequacy of experiences with the electronic health record ($Z=-2.32, p=.02, r=0.20$). Students' satisfaction also increased regarding the Office of Student Affair's awareness of student concerns ($Z=-2.65, p=.01, r=0.26$) and their responsiveness to student problems ($Z=-2.11, p=.03, r=0.21$).

Conclusions:
Our study suggests the need to monitor within-person differences diligently on the learning environment rather than just aggregate class data. Further investigation is needed through multiple methodologies (e.g., continued annual surveying, focus groups/interviews, curriculum review of interventions) to understand medical student experiences and perceptions.

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Assessing the concordance of narrative comments with supervision ratings provided during Entrustable Professional Activity assessments

Submission Type: Research Abstract
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Abstract Body:

Research Statement/Research Question:
In this study, we examined the concordance of supervision ratings and narrative comments provided in EPA assessments.

Background and relevance of the study:
Recent reviews have called for additional studies to assess the validity of Entrustable Professional Activity (EPA) assessments.

Design and Methods:
A stratified random sampling of EPA assessments completed by assessors between February 2018 - February 2020 in various clinical settings were extracted. Narrative comments were separated from the supervision rating assigned at the time of the assessment. An expert panel used the narrative comments to independently assign a supervision rating. The Kendall W test of concordance was used to assess inter-rater reliability and to examine comparisons with original supervision ratings.

Results:
For 100 comments, the overall coefficient of concordance (CC) amongst the panel was .67 for EPA 1-history (HX) comments; .76 for EPA 1-physical exam (PE); and .74 for EPA 6-oral presentation (OP). Overall CC between the panel's median rating and the supervision ratings assessed by any assessor at the time of observation was .39 for HX; .70 for PE and .78 for OP. CC between ratings of the panel and the original assessor were highest for Master Assessors (MAs) for all EPAs. CC between the panel and the original assessor were highest for the pediatrics clerkship for HX = .69 and PE = .89. For OP, CC between the panel rating and rating at the time of assessment on internal medicine and surgery was higher (.88) than pediatrics.

Conclusions:
Inter-rater reliability among experts was > .6. Supervision ratings had variable levels of concordance with ratings given by the original assessor; the highest level of concordance was with comments from MAs.

EPA assessments communicate information about a learner through entrustment-supervision ratings and narrative comments. Alignment of these components is critical in making the data meaningful to learners and useful for summative decision-making.

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Beyond the MD: A Snapshot & Analysis of Dual Degree Programs at U.S. Medical Schools

Submission Type: Research Abstract
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Region: SGEA

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Abstract Body:

Research Statement/Research Question:
The purpose of this study was to determine the scope and type of US dual-degree programs, in particular four-year, Master-level dual-degree programs.

Background and relevance of the study:
Many U.S. medical schools offer dual-degree programs with the goal of graduating physicians with expanded skillsets. Some medical schools provide dual-degree programs within a four-year timeframe and with reduced combined tuition. While prior studies have focused on descriptions of specific dual-degree programs there have been no descriptive reports across all of the US dual-degree programs.

Design and Methods:
We requested data from the AAMC on U.S. medical schools and their aggregate matriculant and graduate counts by dual-degree program for academic years 2014-2015 through 2019-2020. The total number of dual-degree graduates, the number of graduates within specific dual-degree programs, and the length of the program was delineated.

Results:
Of 152 US medical schools, 131 (86.2%) offer at least one of the following MD dual-degree programs: Bachelor of Science (BS), MPH, MBA, Master of Science (MS), Master of Arts (MA), Juris Doctor (JD), or Doctor of Philosophy (PhD). Of the 131 medical schools offering dual-degree programs, 65.8% offer MD/Master programs with 76.9% offering MD/PhD and 12.5% MD/JD programs respectively. Of those 100 schools that offer combined MD/Master programs, the number of total graduates per year per school ranges from 1 to 59. Twenty-six (17.1%) medical schools offer four-year MD/Master programs. Nineteen of these schools graduate an average of 10 or more students per year, and 4 graduate an average of 30 or more students per year.

Conclusions:
Although many medical schools offer dual degree programs, few offer four-year programs, and fewer graduate a large number of students. Medical schools should explore re-structuring MD/Master programs to offer integrated four-year curricula. A few medical schools have successfully offered four-year MD/Master programs with a large number of graduates and can serve as models for other institutions.

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Becoming a physician: A mixed methods exploration of medical students' experiences in clinical training

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Abstract Body:

Research Statement/Research Question:
To explore how medical students with a range of tolerance for ambiguity (TFA) develop professional identities over the course of their clinical training.

Background and relevance of the study:
Professional identity formation (PIF) represents the step-wise, transformative journey a learner takes toward becoming a competent physician (1-3). Medical students commonly struggle developing their identity, particularly during transition periods such as the start of clinical clerkships (4). One's tolerance for ambiguity (TFA) may influence the degree to which a learner adjusts to the clinical environment (5). The purpose of this study was to explore how medical students develop PIF over the course of their clerkships.

Design and Methods:
A longitudinal convergent mixed methods study was conducted at Virginia Commonwealth University School of Medicine. Participants were third-year medical students stratified by scores of TFA. Measures collected included: data from focus group interviews, journal entries, survey-based instruments, and clerkship grades. Qualitative data were analyzed using a constructivist grounded theory approach. Quantitative data were analyzed using the Fisher's exact test and Nonparametric Mann Whitney U.

Results:
Twenty-two participants participated in the study. Qualitative analysis revealed initial challenges associated with adaptation to the clinical environment. Later, students described awareness of their growth and a focus on specialization. Quantitative analysis demonstrated that students grew significantly in PIF over the course of the study ($p = .046$). Clerkship performance was not significantly correlated with any measure and there were no significant differences between high and low TFA learners.

Conclusions:
The results of this study describe the development of PIF in physicians-in-training. Through experience, mentorship, and adjustment, medical students acclimate to clinical training and demonstrate growth in PIF. Looking forward to specialization may explain growth towards professional identity. TFA did not seem to play a role in PIF. These findings resonate with the non-healthcare literature surrounding PIF theory while adding the importance of specialization for medical students.

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To be or not to be a "frontline physician": Professional identity formation during COVID-19

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Abstract Body:

Research Statement/Research Question:
The study aims to understand the effect of COVID-19 on professional identity formation of medical students, specifically the ways it has shifted their views on their role as physicians in society including the concepts of risk and self-sacrifice.

Background and relevance of the study:
The COVID-19 pandemic has disrupted medical education and highlighted the challenges of being a physician. The effects of COVID-19 on professional identity formation of medical students are unknown.

Design and Methods:
Semi-structured, peer-led interviews lasting 60 minutes were conducted with 28 first-year medical students at the University of Florida and Florida Atlantic University in Spring, Summer and Fall of 2020. Interviews were transcribed and analyzed using a modified grounded theory approach ensuring interrater reliability.

Results:
While some students voiced pride in their profession, others described anxiety about their future role. They wondered how much they would be called upon to sacrifice for their patients and expressed trepidation at entering what they perceived as a dysfunctional medical system. Others felt drawn to being useful in emergencies and felt reinforced in their career choice. The students also increasingly recognized the relationship between medicine and public health. They felt physicians should communicate health information although they expressed discomfort with patients who may not believe in COVID science. Students were divided regarding the relationship between politics and medicine but felt that these were inseparable.

Conclusions:
COVID-19 has impacted the professional identity formation of medical students by creating tension between "heroism" versus awareness of the risk of being "frontline healthcare workers." They struggle to understand how to fulfill their role within a healthcare system plagued with problems and intertwined with politics.Medical school curricula should foster facilitated discussions whereby students can discuss and navigate tensions created by COVID-19. Students must reflect on their role as future physicians practicing medicine in a politicized world.

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How Do We Evaluate a Geriatric Patient as a Team? Results from an Interprofessional Geriatric Workshop for Undergraduate Medical, Occupational Therapy, and Physical Therapy Students

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Region: SGEA

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Abstract Body:

Research Statement/Research Question:
We created an interprofessional geriatric workshop and examined changes in student perceptions of interprofessional teams, attitudes towards the geriatric population, and empathy towards patients.

Background and relevance of the study:
The aging population in the United States poses considerable challenges to our healthcare system, and introducing students to interdisciplinary teams is crucial for improving geriatric care. [1]

Design and Methods:
Second year medical students participated in a 4-hour workshop in collaboration with students from occupational therapy (OT) and physical therapy (PT). Stations emphasized dysphagia assessments, fall risk assessments, cognitive function, Beers Criteria®, home health assessment, and a macular degeneration virtual reality experience. [2] Pre- and post-surveys were administered including the Attitudes Towards Health Care Teams (ATHCT) scale, UCLA Geriatrics Attitudes Scale, and Jefferson Scale of Empathy. [3-5] A focus group of students from each discipline evaluated students' perceptions and experiences after the workshop. Descriptive statistics, paired t-tests, and Analysis of Variance (ANOVA tests) assessed for significant differences. Qualitative analysis incorporated Glaser's constant comparative method to identify themes.

Results:
In total, 189 medical students, 39 OT students, and 36 PT students participated in the workshop. Of our participants, 120 students completed the pre/post surveys (ATHCT, UCLA Geriatrics Attitudes Scale, and Jefferson Scale of Empathy), demonstrating significant increases in students' perceptions of the value of interprofessional education ($P < 0.001$); however, significance was not demonstrated in the latter two scales, likely due to the relatively high scores evaluating attitudes towards geriatric patients and empathy in pre-workshop data. Analysis of the focus group data indicated that participants advocated for increasing the number of interprofessional activities, moving activities earlier in the curriculum, and including pharmacy students in future activities.

Conclusions:
Introducing medical, OT, and PT students to a variety of geriatric assessments in an interprofessional environment, positively influences their perceptions of working as an interprofessional team member to deliver comprehensive care to older adults.

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Critical Medicine: An Examination of Pre-clerkship PBL Curriculum Through a Critical Race Theory Lens

Submission Type: Research Abstract
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Region: SGEA

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Abstract Body:

Research Statement/Research Question:
How do pre-clerkship problem-based learning cases reflect the sociopolitical and historical environments shaping medical education? What is revealed about the embedded curriculum within these artifacts when viewed through the lens of critical race theory?

Background and relevance of the study:
The 2020 COVID-19 pandemic laid bare and widened existing fractures in health equity along racial and ethnic lines in the United States. While medical schools are moving to incorporate health equity focused curriculum, few studies have examined existing biomedical science curricula to determine how they may perpetuate or disrupt dominant racial narratives in medicine. This study applies a critical race theory (CRT) lens to the language in problem-based learning (PBL) cases to better elaborate on these mechanisms.

Design and Methods:
Using a comparative case study methodology, this study draws on texts from six pre-clerkship PBL cases and associated facilitator guides. Through critical discourse analysis (CDA), sentences were coded for genre, style, and actions, then emerging themes were interpreted using core tenets of CRT. The author engaged in reflexive analytic memo writing and researcher triangulation throughout to ensure trustworthiness and credibility of findings.

Results:
Patients holding racialized identities were more frequently excluded from or passivated within cases. Patients with Asian racial identities were associated with verbs of cognition and perception; African American patients, affective and social/relational verbs. Additionally, the lack of explicit racial/ethnic descriptors for most patients, unless presented as a biomedical risk factor, and for all physicians underscores a colorblind ideology that erases whole facets of identity and lived experience.

Conclusions:
In this study, a hierarchy emerged, where patients with racialized identities subtly positioned as "lesser than" physician in the clinical encounter through word choice. Critical examination of language in PBL curricula, and extending to other durable curricular artifacts in pre-clerkship medicine, presents a powerful tool for examining, and potentially disrupting, subtle racial narratives.

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Clinical Skills Confidence: Not Impacted by Prolonged Time away

Submission Type: Research Abstract
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Region: SGEA

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Abstract Body:

Research Statement/Research Question:
Will the extended pandemic-related time away from clinical skills training and patient care impact student confidence in their clinical abilities at the start of clinical clerkships?

Background and relevance of the study:
Our clinical skills curriculum utilizes the Entrustable Professional Activities (EPAs) to frame training. In the pre-clerkship curriculum students focus on fundamental patient care skills (e.g.: history and physical exam, documentation, oral presentation)[1]. Other EPAs are introduced through didactics or problem-based learning cases.

Design and Methods:
In 2018 and 2019 a brief didactic describing the EPAs was presented just prior to starting core clinical clerkships, and students were asked to complete a questionnaire which asked (1) how much training they felt they has received for each EPA in the pre-clerkship curriculum and (2) how ready they felt to perform each EPA.[2] The readiness scale uses language from the EPA document and ranges from "observe only" to "perform without supervision". Responses were summarized and shared with students. In 2020 students participated in a Transitions to Clerkship course (after being away for over 5 months) including the EPA discussion and questionnaire. We analyzed student responses to each item and compared their responses to those of the prior years.

Results:
Responses in 2020 (n=211) reached at least 90% for each question. Perceived curricular exposure to the thirteen EPA skills mirrored prior cohorts; perceived readiness to perform each EPA was fully aligned with prior cohorts. The highest rated skills were "obtain a medical history and perform a physical exam" followed by "documentation" and "oral presentation" of a patient encounter.

Conclusions:
Despite having no actual or simulated patient contact for several months, perceived readiness to perform skills beginning clerkships (Sept 2020) was no different than prior years. While somewhat unexpected, this finding represents student self-perception and not actual ability. Follow up with this class mid-year will reassess their perceived skill reflecting on clerkship experiences.

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Medical Student Attitudes Toward Substance Use Disorder Across Undergraduate Medical Education

Submission Type: Research Abstract
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Region: SGEA

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Abstract Body:

Research Statement/Research Question:
A review of attitudes toward patients with substance use disorder (SUD) among physicians and other health professionals found evidence that they see SUD patients as violent, manipulative, and unmotivated. Medical students perspectives toward SUD have not been surveyed, nor how attitudes might differ at different stages of their education. Our medical students attend several sessions regarding SUD during their first three years of school. Our goal is to assess the role of undergraduate medical curriculum on the attitudes of medical students towards SUD at different levels in their training as a quality improvement project..

Background and relevance of the study:
SUD are determined by impairments in different areas including health problems, disability, and failure to meet responsibilities at work, school, or home and caused by the use of alcohol and/or other drugs. Negative attitudes toward SUD create bias, which leads to discrimination toward each member of the group. This discrimination affects the treatment that the patients receive. Removing stigma is a critical factor in the development of high-quality treatment services.

Design and Methods:
The Addiction Belief Inventory (ABI) is a validated measure of attitudes regarding addiction and substance use. All our medical students completed the ABI between September 2019 to January 2020. The survey included 30 questions contained within eight subscales. ABI score classifies answers from 1.0 as strongly disagree to 5.0 as strongly agree.

Results:
Our data demonstrated a consistency between the responses from all medical students within each of the eight subscales of the ABI regardless of the level of training of the student. Medical students overwhelmingly (91%) perceive addiction as a chronic disease and over two-thirds endorsed patients seeking professional help.

Conclusions:
With this knowledge, medical schools can tailor undergraduate medical education to minimize bias and negative attitudes towards SUD patients. Armed with this skill set, future physicians will be better prepared to better care for SUD patients.

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Faculty Development Interests of Millennial Faculty Compared to Boomers and Gen X Faculty: Are there differences?

Submission Type: Research Abstract
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Region: SGEA

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Abstract Body:

Research Statement/Research Question:
What are the generational needs and differences of Baby Boomers, Generation X and Millennial Faculty.

Background and relevance of the study:
Faculty development designers have become increasingly challenged in meeting the diverse career and professional development needs of an ever-changing faculty body. Generational diversity in medicine is reflected in how each generation receives and understands knowledge generation and mechanisms for facilitation of knowledge and skills.

Design and Methods:
An anonymous 18 item online faculty development needs assessment survey was emailed to all 1277 College of Medicine faculty. Responses were received from 310 faculty [Millennials: 98(31%), Generation X: 144(46%), Boomers 68(22%)].

Results:
Setting the standard of 80% of responses designating most or somewhat interested, the faculty development programs that appealed across all three generations were active learning strategies, instructional technology, team building/team management, motivating others, personal goal setting/personal effectiveness, conflict management, negotiation skills, and using talent effectively. Conversely, setting the standard of 45% or fewer responses designating interest, little interest was indicated for sessions on teaching with standardized patients across all generations.

Generational differences were noted in responses to sessions on leading small group learning sessions with 80% of Generation X and Millennial faculty indicating interest compared to only 60% of Boomers. Similarly, 72% of Millennials were interested in sessions on teaching at the bedside compared to 36% of Boomers; 82% of Millennial faculty were interested in sessions on teaching clinical reasoning compared to 55% of Boomers. Millennial faculty indicated greater interest in sessions pertaining to research compared to the other cohorts.

Conclusions:
The results of this study suggest that faculty development professionals should consider offering a wider variety of faculty development sessions appealing to select faculty groups. Millennial faculty indicated interest in attending skill development sessions in teaching, research, and leadership areas that are life stage-appropriate to their current responsibilities and are likely to impinge on their future career success

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Characterizing the Impact of Medical Student Clinical Exposure to Patients with Opioid Use Disorder on Perceptions of Stigma and Patient Care

Submission Type: Research Abstract
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Region: SGEA

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Abstract Body:

Research Statement/Research Question:
This study sought to characterize medical students' experiences with patients with opioid use disorder (OUD), understand the features that make a patient encounter memorable, and explore factors that influence future clinical practice and/or stigma.

Background and relevance of the study:
OUD is a growing public health crisis. Despite educational initiatives, many residents and physicians do not feel comfortable working with patients with OUD. Social stigma is a roadblock to delivering equitable and effective care.

Design and Methods:
A qualitative study was conducted using Grounded Theory and purposive sampling of fourth-year medical students (M4s) enrolled at Wake Forest School of Medicine. Data collection consisted of a free-text survey, followed by semi-structured interviews. The survey served to gain an understanding of student encounters with OUD, and interviews helped gain a deeper understanding of the impact on future practice and stigma. Thematic analysis was used to analyze data.

Results:
A total of 170 out of 237 students (RR = 71.7%) completed the free-text survey, and twelve students were interviewed. Patient encounters occurred in three primary settings: Emergency Department, Inpatient Clerkship, or Narcotics Anonymous meetings. Clinical encounters were memorable when there was: conflict with patients/teams, complicated care, inadequate care, and relevance to the student's future career. Memorable encounters influenced future practice by changing students' approaches to: future treatment, future communication, or professionalism. Regarding OUD stigma, students reported that these encounters made them: more aware of stereotypes in medicine, stereotypes in their personal lives, and generated actions that students want to take.

Conclusions:
An influential clinical encounter has the potential to influence medical students' clinical management and stigma towards OUD. Impactful encounters increased knowledge of OUD and fostered empathy and perspective-taking. Not all encounters had a defining impact on students' stigma toward OUD. Medical schools need to create opportunities that will have lasting impact by encouraging students to fully engage with patients with OUD.

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Behavior Characteristics, Stressors, and Response to Remediation for Students With Recurrent Professional Behavior Lapses

Submission Type: Research Abstract
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Region: SGEA

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Abstract Body:

Research Statement/Research Question:
Our school tracks faculty-submitted Early Concern Notes (ECNs), which describe student professional behavior lapses. Students who receive ≥ 3 ECNs (3E students) have previously been shown to have less favorable outcomes than other students.1 We questioned (A) whether 3E students were distinguishable from students with fewer ECNs based on types of behaviors reported, reactions to being confronted with the behaviors, or measures of academic performance and personal stressors; and (B) the impact of remediation on medical school outcomes.

Background and relevance of the study:
Professionalism is a core tenet of medicine and an expectation of patients who entrust their lives to physicians. While many publications address professionalism curricula and intervention programs, less is known about identifying students at highest risk, or outcomes of actual remediation.2,3,4

Design and Methods:
Twenty-eight students received ≥ 3 ECNs between 2011-2020. We recorded: unprofessional behaviors reported for 3E students; whether they were judged at the time of their first ECN to recognize and accept responsibility for their actions; academic performance; and any identified personal stressors. We recorded whether remediation was prescribed, and ultimate medical school outcome (graduation/dismissal).

Results:
The nature or perceived egregiousness of unprofessional behaviors reported for 3E students were indistinguishable from those of students with fewer ECNs. All 28 3E students had been judged as resistant to recognizing or accepting responsibility for their actions. Academically, 82% of 3E students experienced course failures, a rate far exceeding that of students with fewer, or no ECNs. The most common added stress characteristics identified were medical/mental illness, social anxiety or neurodiverse characteristics, and a pattern of immature behavior. Seventeen 3E students graduated, including 10 of 15 prescribed remediation activities. Seven students were dismissed and 4 remain enrolled.

Conclusions:
Students with recurrent professional behavior lapses are a diverse group of high-risk individuals. Proper identification, support, and attention to underlying issues is essential to promote success in these learners.

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Vaccine Recommendations in Standardized Patient Encounters: How Ambivalent Communication Undermines Best Practices

Submission Type: Research Abstract
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Region: SGEA

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Abstract Body:

Research Statement/Research Question:
In this project, we explored how medical students discuss vaccine recommendations in standardized patient encounters. We aimed to identify model language and to understand whether students' verbal discussions with patients aligned with their objective recommendations.

Background and relevance of the study:
Communication skills impact patient care, and patient uptake with vaccines is strongly associated with physician recommendations [1-2]. In the context of the COVID-19 pandemic, vaccine hesitancy is also both widespread and highly consequential [3-4]. Exploring student communication around vaccine recommendations is therefore critical for understanding how to train students to practice effective communication strategies that promote widespread vaccination.

Design and Methods:
We coded a random sample of video-recorded standardized patient encounters with rising third-year medical students. The patient was establishing primary care, had not received care in over a decade, and asked the student about "shots needed." We recorded students' vaccine recommendations and transcribed the language used to discuss vaccines. We compared this language with a post-encounter assessment that directly asked students about recommending various preventive care measures for the patient, including certain vaccines.

Results:
Among 63 coded encounters, vaccine discussions were categorized as directly recommended, suggested, not recommended, or not discussed. With the human papillomavirus (HPV) vaccine, for example, only 12.7% of students directly recommended the vaccine verbally to patients. Other students instead used indirect language (e.g., "you can get it if you want"). This contrasted the post-encounter assessment, in which 40.3% of students indicated that they were likely to recommend the HPV vaccine to the patient.

Conclusions:
Ambivalent language can undermine students' messaging regarding vaccine importance. The low recommendation rates and indirect language observed here may indicate that students lack vaccine confidence and knowledge or that students overestimate patients' understanding of immunizations. In our study, the most effective vaccine recommendation language highlighted both patient autonomy and definitively emphasized the importance of vaccines as a preventive care measure.

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Digitization of Medical School Education In Response to COVID-19: Attitudes and Perspectives of Medical Faculty to New Virtual Curriculums

Submission Type: Research Abstract
Accepted as: Poster
Region: SGEA

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Abstract Body:

Research Statement/Research Question:
To examine medical school faculty experiences with digital resources before and during the COVID-19 pandemic.

Background and relevance of the study:
Guidelines during COVID-19 challenged the medical education system, limiting clinical rotations and student involvement in direct patient care and substituting traditional in-person learning with digital lectures [1,2]. While preclinical curricula were becoming increasingly digital-based prior to the pandemic, the clinical years remained mostly in-person. Despite the major challenges to medical education, few studies have investigated faculty perceptions of digitized medical education and quantified the impact of COVID-19 on the education of a future generation of physicians.

Design and Methods:
This is a single-center, cross-sectional study utilizing a REDcap survey. We surveyed all Wake Forest School of Medicine course-directing faculty (n=52) for MD students during the 2019-2020 academic calendar. Survey questions focused on respondents' experiences before and during student displacement from in-person learning secondary to COVID-19. Data was analyzed using Chi-squared and Fisher's exact tests in SPSS.

Results:
Response rate among faculty was 50%. Faculty reported decreased utilization of clinical settings and in-person lectures ($p<0.01$), and expressed concern that student learning hours were less than they should be during student displacement ($p<0.001$). Of faculty interested in increasing digital teaching (75%), resources of interest included video lectures (79%), educational games (53%), and podcasts (58%). While a minority of faculty reported using telehealth to teach (32%), about half of those who used telehealth enjoyed it (44%), believed it was an effective learning tool (44%), and wanted to continue using it (55%).

Conclusions:
Pandemic-induced curricula changes forced many faculty to rely on digital teaching alternatives. These data suggest that most faculty are interested in further adopting digital resources. Therefore, medical education leaders should push development and implementation of more virtual teaching modalities such as telemedicine and reconsider traditional in-person medical teaching paradigms.

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The role for simulation in professional identity formation in medical students

Submission Type: Research Abstract
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Region: SGEA

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Abstract Body:

Research Statement/Research Question:
This study explored student professional identity experiences related to participation in a clinical simulation during the first week of medical school.

Background and relevance of the study:
Implementation of structured professional identity formation experiences in the curriculum is challenging especially early in medical education. The paradigm shift towards individualized learning plans and competency-based education have decreased time to graduation, and highlighted the need for medical students to acculturate sooner in their training when clinical opportunities are scarce. Simulation may offer one mechanism for relevant clinical experiences for students to self reflect on their roles as student-physicians.

Design and Methods:
All matriculating M1 students participated in a 45-minute Simulation-based Orientation to Medical School (SOMS). Goals of the SOMS were to orient students to simulation based clinical learning environments and introduce the concept of teamwork skills in clinical medicine. Each team rotated through three separate clinically relevant simulation scenarios designed to require the minimum level of medical knowledge expected from a beginning first year student to successfully complete each task. Participants completed evaluation surveys measuring PIF related experiences during the SOMS.

Results:
All participants completed the survey (n=186). Students agreed that the SOMS helped them feel what it is like to be a doctor (90%) and transition to the role of student-physician (91%). Student comments about the SOMS reflected PIF related processes such as building a sense of a community of practice among their peers in their roles as a healthcare team. Students also valued the opportunity to engage in reflection about their roles as student-physicians.

Conclusions:
Simulation experiences can be used as a trigger for self-reflection and to assist in medical student professional identity development as early as the first weeks of medical school. Opportunities to reinforce experiences that contribute to professional identity formation with simulation should be integrated longitudinally in the curriculum.

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Impact of Racial (In)justice Events on Matriculating Medical Students

Submission Type: Research Abstract
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Region: SGEA

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Abstract Body:

Research Statement/Research Question:
How have recent social injustice events impacted the self-reported wellbeing and school preparation of incoming medical students?

Background and relevance of the study:
Recent racial injustices and social activism efforts have created a national spotlight that highlights systemic disadvantages and healthcare disparity (1). For medical matriculants, these events can present unique challenges as well as learning opportunities and identity formation. Understanding how students respond to major societal stressors is essential for designing interventions to maintain psychological health and optimize learning.

Design and Methods:
188 matriculating medical students from the Class of 2024 were asked to, "Describe how the recent social injustices related to police brutality towards persons of color and social action such as protests and statue removal has impacted your perceptions, wellness, and/or preparation for attending medical school at Virginia Commonwealth University (VCU)?" Qualitative analysis involved a mixed deductive and inductive approach, with emergent themes validated through team review (2-3).

Results:
115 of 188 matriculants responded (62%). 75% expressed a eustress response, grouped into three emergent themes: desire for action or change, heightened awareness, and university/community pride. Among the eustress cohort, students felt "empowered to incorporate racial justice into education and medical practice." 24% of the 115 expressed a distressing response, grouped into two emergent themes: personal stress and university/community concerns. The distressing cohort expressed feelings of hopelessness, anxiety, and worry in response to "the alarming [nature] of racism and police brutality" and subsequent environmental stressors.

Conclusions:
Recent events present a unique opportunity for medical education reform and program development to optimize learning from these events with the hopes of promoting activism and social awareness among future physicians. Medical students responded to social injustice events and local social activism efforts with both empowerment and mental distress. Understanding the impacts of these events can be useful for mitigating negative psychological health outcomes and promoting socially conscious physicians.

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Medical school matriculant wellness in the era of COVID-19 and social injustice

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Abstract Body:

Research Statement/Research Question:
What effects have COVID-19 and social (in)justice events had on the wellbeing of matriculating medical students?

Background and relevance of the study:
For the incoming 2020 medical school class, the stress at matriculation included two new factors: COVID-19 pandemic and social (in)justice events. Understanding their impact on matriculants is essential for adaptation to support and improve students' psychological health and mitigate potential negative educational outcomes.

Design and Methods:
A cohort control quantitative study evaluated the stress and well-being of a single-site matriculating classes at orientation from 2018 through 2020. Surveys measured well-being(1), perceived stress (PS)(1), self-reported resilience(1), and academic self-concept (ASC)(2). Between-subject ANOVA analysis was used to test for differences between the class of 2020 and the control classes of 2018/2019. Bonferroni post-hoc tests checked for significant differences between each cohort. Pearson correlations examined associations between the four-study variables.

Results:
542/564 students responded from three cohorts [average response rate of 96% (range 90-99%)] No differences existed between the control classes entering in 2018/2019 on all variables. Statistically significant differences appeared in resilience, ASC, well-being, and PS for the class of 2024. There were reductions in well-being (16.28±4.14; p=.003), overall resilience (3.46±0.65; p=.016), and academic self-concept (3.05±0.30; p=.002). Incoming medical students' perceived stress was increased (5.43±2.0; p=.000).

PS negatively correlated with overall well-being ($r = -0.61$; $p < 0.05$). Moderate positive correlations were found between ASC and both well-being ($r = 0.40$; $p < 0.05$) and PS ($r = 0.40$; $p < 0.05$), respectively. A moderate negative correlation existed between PS and resilience (3).

Conclusions:
2020 matriculants demonstrated lower overall resilience, well-being, and ASC, as well as increased PS. This may be due to reactions to injustices, online learning, re-evaluation of career path, and social isolation while moving to new areas (4-8). Implementations should develop social support structures, heighten awareness and education on COVID-19 and social justice topics, and increase resources (3).

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The Correlation Between Clinical Science Mastery Series Self-Assessment Results and Performance on NBME Clinical Science Subject Examinations

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Abstract Body:

Research Statement/Research Question:
To investigate the overall correlation between clinical science mastery series (CSMS) self-assessments and clinical science subject (shelf) examination scores, and the correlation between the two when self-assessments are taken within one week, one to two weeks, and over two weeks from the shelf examination.

Background and relevance of the study:
CSMS vouchers were provided by the school beginning with the cohort of MS2020 due to shortened clerkships. This analysis investigates the relevance of continuing to provide CSMS vouchers for future cohorts.

Design and Methods:
Data for this analysis is derived from the cohorts of MS2020 and MS2021. Significance of correlation was tested using Pearson product-moment correlation coefficients on records where students took a self-assessment prior to the respective shelf examination for seven clerkships (N = 888). First-attempt scores were used for both CSMS and shelf examination scores, with subsequent attempts being eliminated from the dataset.

Results:
Overall correlation between CSMS and shelf examination results is moderate with a Pearson's correlation coefficient of 0.55. 297 (33.45%) self-assessments were taken over two weeks from the date of the shelf examination, 432 (48.65%) were taken between one and two weeks from the shelf examination, and 159 (17.91%) were taken within a week of the shelf examination. The Pearson's correlation coefficient was 0.47, 0.53, and 0.6 for each timeframe, respectively, indicating that the closer the self-assessments are taken to the shelf examination, the more predictive the self-assessments are for actual shelf examination performance.

Conclusions:
While CSMS self-assessments may be valuable for students to assess their own understanding and to target knowledge gaps by using feedback on incorrectly answered questions, the correlation coefficients suggest that CSMS self-assessments are of limited value in predicting actual shelf examination performance. Self-assessments taken closer in time to the shelf examination provide the most predictive ability in actual shelf examination performance.

References:
N/A

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Medical Residents as Community Health Educators

Submission Type: Research Abstract
Accepted as: Poster
Region: SGEA

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Abstract Body:

Research Statement/Research Question:
To determine the effectiveness of residents as community educators as well as the significance of racial, gender, and linguistic educator-learner concordance for community health events.

Background and relevance of the study:
Residents are effective educators of their peers and medical students; however, little is known about them as community educators. One study found that when internal medicine residents taught community members about geriatric health, they were found to deliver information clearly (1). Moreover, previous studies have found that patient-physician racial concordance is associated with higher patient-perceived communication levels (2). We surveyed attendees of community health events to determine the effectiveness of residents as educators as well as the significance of educator-learner concordance.

Design and Methods:
One-hour informational talks were held by physicians at various community centers providing education on cardiovascular health. Participants received a booklet before the informational session containing questions on their demographics as well as ten content-based questions. After the session, participants were asked to complete the same ten content-based questions. Statistical software was used to analyze the data collected.

Results:
247 people attended 18 events and returned surveys. 67% of the participants identified as women and the majority of attendees were non-white Hispanics. Scores improved on average 9 points between the pre-and post-session questionnaires ($p < .0001$). Educator level (PGY-1, PGY-3, or attending) did not significantly contribute to score change. Gender concordance did not significantly affect score change while language and racial concordance did.

Conclusions:
Residents, regardless of education level, were able to effectively educate community members. Although there was some evidence that educator-learner racial and language concordance affected immediate knowledge gain; the results were limited by the small number of educators involved in the events. Although further research is required, this study illuminates both the effectiveness of residents as public health educators and the importance of diversity when recruiting for such community events.

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Segregation Predicts COVID-19 Fatalities in Less Densely Populated Counties

Submission Type: Research Abstract
Accepted as: Poster
Region: SGEA

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Abstract Body:

Research Statement/Research Question:
Which social determinants of health, if any, are important predictors of COVID-19 outcomes?

Background and relevance of the study:
There is a growing emphasis on integrating social determinants of health (SDoH) into medical education; the prevailing question is how to do so in a meaningful way. Decision trees are useful machine-learning tools with broad applications across fields including medicine. Here we explore a unique application of using decision tree analysis to identify the county-level SDoH that contribute to COVID-19 outcomes.

Design and Methods:
County-specific COVID-19 fatality data from California, Illinois, and New York—three US states with the highest county-level COVID-19 fatalities as of June 15, 2020—were analyzed. Twenty-three county-level SDoH were considered. Decision tree analysis visualized associations among SDoH and counties most at risk for high COVID-19 fatality.

Results:
Population density, segregation (between white and non-white populations), and preventable hospitalization rates were key predictors of COVID-19 fatalities. Segregation is a predictor of COVID-19 fatalities in counties of low population density. Model AUC was 0.79, sensitivity was 74%, specificity was 76%.

Conclusions:
The findings support the influence of SDoH on health outcomes, including COVID-19 outcomes, and display the success of decision tree analysis used in this context. These findings display the decision tree's potential in medical education in exploring complex relationships. While population density correlates to COVID-19 fatality, our study also finds that segregation contributes to COVID -19 fatality in less densely populated counties. These findings have implications for COVID-19 resource planning and require appropriate attention.

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Stereotype threat in women internal medicine residents

Submission Type: Research Abstract
Accepted as: Oral Presentation
Region: WGEA

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Abstract Body:

Research Statement/Research Question:
Stereotype threat (ST) is a phenomenon in which performance is impaired due to fear of confirming negative stereotypes. We explore the prevalence and impact of ST amongst women internal medicine residents.

Background and relevance of the study:
Women in academic medicine are underrepresented in leadership positions, paid less, and experience lower perception of potential. ST may contribute to these disparities. To create an equitable environment for women physicians, we must understand how ST impacts their learning experience.

Design and Methods:
This mixed-methods study used an explanatory sequential design with a survey followed by focus groups. In 2019, we invited all UCSF internal medicine residents to complete a survey adapted from the stereotype vulnerability scale (SVS). We invited women who endorsed ST, defined as a score ≥18, to participate in focus groups. We are using an inductive approach for ongoing thematic analysis.

Results:
Survey response rate was 60.4% (110/182), with 65 women and 45 men. Among respondents, significantly more women endorsed ST compared to men (80% v 2.2%, $p < 0.001$), with respective mean SVS scores 21.4 and 11.6 out of 30. 17 women participated in 3 focus groups. Preliminary thematic analysis shows that participants perceive that patients, nurses, and other physicians doubt their clinical acumen and question their authority. Lack of respect manifests by being ignored or interrupted, or not receiving credit for their contributions. They perceive “pushback” when giving orders and do not feel recognized as leaders, especially in high-acuity clinical settings. They find the stereotypical expectation to be warm at all times “exhausting” and struggle with assertiveness, receiving feedback they are either “pushy” or “indecisive.” They sometimes avoid asking questions and devote energy to proving themselves and maintaining confidence.

Conclusions:
Women residents are vulnerable to ST. Gender dynamics in the inpatient setting place a high cognitive load burden on women residents that may detract from their training.

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Impact of Being a Medical Student Peer Instructor on Professional Skills and Career Development

Submission Type: Research Abstract
Accepted as: Oral Presentation
Region: WGEA

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Abstract Body:

Research Statement/Research Question:
How does participating as a peer instructor influence a medical student's leadership skills, professionalism, career development, and sense of belonging?

Background and relevance of the study:
While prior studies demonstrated that self-perceived benefits of peer tutoring include professionalism, and increased likelihood of teaching in the future, these results were not quantified, lacked specificity, and did not explore the experiences of medical students. We aim to comprehensively understand the qualities gained by medical student peer content creators for the Keck Online Learning Initiative (KOLI), who create flashcards, Keck Anatomy Mentorship Program (KAMP) mentors, who tutor anatomy, Keck Peer Instruction Program (KPIP) instructors, who provide interactive lectures to their students, and academic coaches (AC), who are one-on-one peer tutors.

Design and Methods:
In this cross-sectional study, 84 current and former medical students from the Keck School of Medicine of USC evaluated the impact of their participation in KOLI, KAMP, KPIP, and/or AC on their leadership skills, professionalism, career development, and sense of belonging. The data was collected in a survey which assessed 15 aspects of leadership, 14 aspects of professionalism, 7 aspects of career development, and 8 aspects of sense of belonging using a 5-point Likert-scale, as well as multiple open-ended responses. Descriptive, as well as univariate and multivariate analyses, are currently ongoing.

Results:
Preliminary analyses demonstrate that the greatest positive impacts were in career development and professionalism, where over 70% of participants agreed or strongly agreed that they benefited in 6/7 and 12/14 aspects tested, respectively. The area of least impact was sense of belonging. The single most common skill gained was the confidence to teach medical concepts to peers, which 99% of respondents reported.

Conclusions:
By identifying specific skills gained through peer tutoring, we can help develop programs that facilitate the growth of future physicians who can effectively teach other physicians and lead the field of medicine.

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Skeptical self-regulation: Resident experiences of uncertainty about uncertainty

Submission Type: Research Abstract
Accepted as: Oral Presentation
Region: WGEA

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Abstract Body:

Research Statement/Research Question:
We aimed to explore novice trainees' experiences with uncertainty in practice, seeking to understand the unique cues that they attended to and how they thought through potential responses to these difficult moments.

Background and relevance of the study:
Practicing clinicians draw from past experiences to gather clues about complex clinical situations, concurrently thinking through steps they might try to address, disambiguate, and monitor these challenging moments.[1-4] We were interested in exploring how novice clinicians managed similar situations in a supervised training environment.

Design and Methods:
Informed by constructivist grounded theory,[5] we explored how novice emergency medicine trainees experienced and managed clinical uncertainty in practice. Using a critical incident technique,[6] we prompted participants to reflect on experiences with uncertainty immediately following a clinical shift, exploring the cues they attended to and the approaches they used to navigate these moments. Two investigators coded line-by-line using constant comparison, organizing the narratives into focused codes. The research team discussed the relationships between these codes and developed a set of themes that supported our efforts to theorize about the phenomenon.

Results:
Trainees attended to multiple cues during moments of uncertainty, stemming from the root causes of the patient problems they were facing and the potential management steps that they might take. Yet they also expressed a pervasive sense of uncertainty about their own abilities and appraisals of a situation, which caused struggles with their selection, interpretation, and use of cues in their environment. Participants invoked several approaches to combat this sense of uncertainty about themselves, rehearsing steps before a clinical encounter, checking interpretations with others, and calibrating their appraisals to those of their supervisors and more experienced team members.

Conclusions:
Trainees' struggles with the legitimacy of their interpretations impacted their experiences with uncertainty. Recognizing these ongoing struggles may enable supervisors to provide more effective scaffolding, validation, and calibration of clinical judgments and patient management.

References:

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A Spectrum of Orthodoxy: A Systematic, Critical Review of Team-based Learning (TBL) in Undergraduate Medical Education

Submission Type: Research Abstract
Accepted as: Oral Presentation
Region: WGEA

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Abstract Body:

Research Statement/Research Question:
In the published literature and lesson plans on TBL in UME:

- RQ1: How tightly are programs adhering to the TBL methodology in implementation?
- RQ2: In what ways are medical educators using the methodology to foster complex, multi-domain thinking?

Background and relevance of the study:
Team-based Learning has been the subject of several systematic reviews since its introduction to health professions education [1,2,3], and current trends in curriculum renewal[4] have increased interest in using TBL as an active learning protocol. This study updates features of two major past reviews [2,3,] expands on previous analyses by updating the literature and focusing on the design of application exercises, and adds an additional analysis of 75 TBL lesson plans published in MedEdPortal.

Design and Methods:
The systematic review was conducted using the PRISMA standards, with eligibility criteria that focused on undergraduate medical education in the US and Europe. The initial search identified 145 papers, and 22 studies published from 2009 to 2020; the second phase of analysis reviewed 75 TBL lesson plans published through MedEdPortal since 2005.

Results:
The review of published studies indicates that programs implement TBL along a spectrum of orthodoxy, with most studies including the key features of TBL, but some radically redesigning the protocol. TBL lesson plans focused mainly on basic or clinical science content in isolation, with few focusing on health systems science content or multi-science topics. The lesson plans were found to use objectives that were insufficiently complex for TBL application problems, negating a key strength of TBL.

Conclusions:
While no studies reported negative results for their students regardless of their degree of orthodox adherence, opportunities exist to improve the design and implementation of TBL sessions in UME. Scaffolding tools such as design planners and session templates may help instructors design more complex TBL experiences that are better aligned with the strengths of the methodology.

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Exploring the shadows of COVID-19: It's not just the faculty who are struggling to raise their children during a pandemic

Submission Type: Research Abstract
Accepted as: Oral Presentation
Region: WGEA

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Abstract Body:

Research Statement/Research Question:
We explored how medical student parents at our institution were faring during the pandemic to learn more about how we could support them.

Background and relevance of the study:
Medical students who are parents face unique challenges, including the challenge of completing medical school on time and finding childcare (2). Recommended accommodations for student parents include formal parental leave, policies for making up missed coursework (3), assistance with securing childcare (1), and provisions for social support systems (2). We have many student parents at our institution (from 2016-2020, at least 13% of graduating students had at least one child, compared to 4.5% nationwide), and wanted to learn more about the struggles they experience.

Design and Methods:
We employed a collective case study design (4). Student parents were invited via email to participate in a virtual focus group during May 2020. 12 medical students from all four years participated. The focus groups were conducted by a PhD educational researcher, recorded, and transcribed verbatim. Transcripts were coded using content analysis (5).

Results:
The codes were organized into three themes: (1) disruptions to routine, (2) support systems, and (3) desired improvements. Disruptions to routine: Students dealt with finding new childcare routines after daycares and schools closed: "…I just pretty much [study] when my baby's napping…when he's up, I don't." Support systems: Students appreciated faculty accommodations: "… towards the… [end of the] block, they… started allowing for extended testing time…normally…we have to finish by … 3PM...by the end…they were giving us until 11 PM. Finally, students what still needed to change, including a formal parental leave policy, help finding and subsidizing childcare, and more formal support groups.

Conclusions:
The student parents at our institution face challenges, pandemic notwithstanding, and would benefit from accommodations tailored to their needs. This is of utmost importance as the COVID-19 pandemic continues and disparately impacts medical student parents.

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What happens when you pay medical school faculty to teach?

Submission Type: Research Abstract
Accepted as: Oral Presentation
Region: WGEA

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Abstract Body:

Research Statement/Research Question:
We explored what faculty, who have FTE designated for their teaching role in the MD program, enjoy and do not enjoy about their role.

Background and relevance of the study:
Researchers have explored what incentivizes clinicians to teach, given that many are volunteers or receive little compensation. Faculty are motivated by relationships with students, watching students grow, recognition, and opportunities for growth (1). Disincentives include uninterested students, lack of support, competing responsibilities, and a lack of interest in teaching (1). Knowing that one major barrier to retaining medical school faculty is lack of financial compensation and departmental support, we implemented a "core educator" model in AY2017-2018 to provide ~190 faculty with ~31 FTE of support designated for teaching and created professional learning opportunities specifically for this group. We were interested in how this model might affect incentives/disincentives for faculty.

Design and Methods:
Two years after implementing the core educator model, 72% faculty provided feedback to "What aspect(s) of your core educator role(s) do you (1) enjoy? and (2) not enjoy?" Feedback was coded using content analysis. (2)

Results:
Faculty enjoy working with students, collaborating with other faculty, opportunities to learn, and contributing to curricular development. Faculty do not enjoy grading, administrative tasks, working with entitled/unengaged students, and balancing varying responsibilities.

Conclusions:
The finding that faculty enjoy collaborating with others and contributing to the curriculum is novel. We suspect this is due to the unique charge given to our faculty: to work with a core group to design and deliver curriculum. Unlike other studies, our data does not indicate that our faculty feel unsupported in their roles or that teaching is unimportant. This exploratory survey warrants further investigation, but provides data that is promising in showing that the core educator model cultivates a strong sense of connection with students, community among faculty, and recognition that medical educators and teaching play important roles.

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Finding (and keeping) a voice amidst complex systems and increased supervision: residents' perceptions of clinical decision-making and patient care ownership

Submission Type: Research Abstract
Accepted as: Oral Presentation
Region: WGEA

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Abstract Body:

Research Statement/Research Question:
This study explored relationships between clinical decision-making, autonomy, ownership of patient care and learning.

Background and relevance of the study:
Concerns about patient safety have spurred calls for increased clinical supervision of residents.1 Increasing supervision inhibits residents' autonomy which may limit their sense of ownership over patient care and impede learning.2-4 Factors that contribute to residents' perceptions of autonomy and the relationship to clinical decision-making and motivation to learn are incompletely understood. Examining these relationships may augment resident learning despite conditions of increased supervision.

Design and Methods:
We recruited 37 residents from 3 pediatric programs to participate in semi-structured interviews using critical incident technique and explored experiences related to remembered moments of decision-making.5 We analyzed data through an iterative, inductive process in which 2 investigators coded interview transcripts to generate themes. We used DedooseTM software for analysis. Institutional review boards approved this study.

Results:
We identified three major themes:

1) Decision-making opportunities can be diminished by a) learning environment factors (culture, sub-specialist involvement), b) patient factors (complexity, acuity), c) resident factors (seniority, knowledge, confidence).
2) Sense of ownership is most affected by a) relationship with patients and families, b) inclusion in decision-making.
3) Cultivation of purpose is attributed to a) relationships with families, team and supervisors, b) finding and holding a voice.

Residents described ownership as being viewed as the doctor taking care of the patient, regardless of who made decisions. The degree of ownership residents felt varied by institution.

Conclusions:
The ability for residents to feel ownership over clinical care of their patients is essential to their professional development. Several factors outside residents' control affect their ability to do so, including institutional culture and patient complexity. Lessons learned from this study can help redefine

what autonomy means and empower both supervisors and residents to create an effective learning environment despite increased supervision.

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Self-regulated Learning and Entrustable Professional Activities-based assessments: Initial Lessons from the UCSF Pediatric Residency Program

Submission Type: Research Abstract
Accepted as: Oral Presentation
Region: WGEA

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Abstract Body:

Research Statement/Research Question:
To investigate whether assessments grounded in Entrustable Professional Activities (EPA) facilitate self-regulated learning in pediatric residents.

Background and relevance of the study:
In the clinical learning environment, residents should be encouraged to drive their own learning. Engagement in self-regulated learning (SRL) practices (information-seeking, goal setting, progress tracking) may support this(1-3). EPAs, observable and essential clinical activities, are a potential alternative framework for trainee evaluation and may provide a format for authentic workplace-based assessment(4-6). We developed EPA-based assessments for our pediatric residency program and examined whether this assessment facilitated residents' utilization of SRL behaviors.

Design and Methods:
We conducted 14 semi-structured interviews with current and recently graduated pediatric residents. Questions focused on how they utilized EPA-based assessments and their use of self-regulated learning behaviors. Using SRL as a sensitizing concept, we conducted a thematic analysis of the interview data using a constant comparison approach to identify themes and sub-themes.

Results:
We found that residents engaged in goal setting and progress tracking behaviors consistent with SRL. However, residents did not see EPA-based assessments as the primary catalyst for this process. Residents' self-regulated learning behaviors appear driven by other factors: relationship with supervisor, ad-hoc feedback focused on patient-specific encounters, clinical uncertainty and future career planning. Residents felt validated in their knowledge and abilities by the EPA-based focus on entrustment and appreciated its contextual relevance. Residents reported selective engagement with assessments as part of enacting SRL due to their perception of faculty's limited ability to directly observe their work.

Conclusions:
While trainees report EPA-based assessments to be useful in framing the context and content of feedback, the assessments themselves do not appear to drive self-regulated learning, and instead trainees find more value in ongoing dialogue with invested supervisors. Future work should look at ways to optimize content and delivery of assessments to better promote SRL.

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Am I Thinking What You're Thinking? Response Process Validity Evidence for a Workplace-Based Assessment in Surgery

Submission Type: Research Abstract
Accepted as: Oral Presentation
Region: WGEA

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Abstract Body:

Research Statement/Research Question:
To evaluate the cognitive processes faculty and residents use while completing a smartphone-based workplace-based assessment (WBA), the System for Improving and Measuring Procedural Learning (SIMPL)

Background and relevance of the study:
Constructing a comprehensive validity argument based on Messick's unified validity framework[1,2] for WBAs is challenging given their formative role that emphasizes feedback and assessment for learning.[3] When evidence is gathered, response process is often incompletely explored by failing to include user perspectives, but these may be key to understanding if the assessment can achieve its formative goals.[4]

Design and Methods:
We collected response process evidence through retrospective think-aloud interviews with 4 resident and 5 faculty surgeons during a 6-month pilot of SIMPL in a single department at a tertiary academic medical center. Users explained their interpretation of the three assessment questions (level of autonomy, operative performance, case complexity) and corresponding ratings. We performed directed qualitative content analysis of the data, looking for similarities and differences in response interpretations between users and compared our findings to what is known about the developers' intents.

Results:
Both faculty and residents viewed SIMPL as a possible solution to improve operative feedback. Evidence for response process showed that residents and faculty had overall similar interpretations, but some of their interpretations may be inconsistent with the developers' intent. For example, negative wording of the first performance rating level steered some faculty away from selecting it, suggesting that an emotional response to the wording, rather than the construct of interest, was impacting interpretation.

Conclusions:
Response process evidence for SIMPL supports a reasonable argument for the interpretation of the question ratings and can be improved with additional clarifications. User perspectives can add essential evidence for response process validity for WBAs. Improving alignment of the interpretations will promote consistency in meaning and support the use of WBAs as formative assessment.

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Lived Experiences of Belongingness, Inclusion, and Cooperation Relating to Joy in Work

Submission Type: Research Abstract
Accepted as: Poster
Region: WGEA

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Abstract Body:

Research Statement/Research Question:
The objectives of this study were to gain an understanding of (1) what enables and inhibits peoples' joy in their work and (2) what can be done to increase joy in work.

Background and relevance of the study:
Multiple factors can facilitate or inhibit joy in work including positive work environment, retaining good staff, adequate benefits/salary, living the organizational mission, and adequate work resources (Fishman, Mehta, Siewert, Bender, & Kruskal, 2018; Manion, 2003; Rutledge, Wickman, & Winokur, 2018). In turn, joy has the capacity of making the workplace a more appealing environment, improving recruitment and positively effecting the quality of relationships. Moreover, engagement and employee commitment are related to one's attitude about their work and influences retention rates (Manion, 2003).

Design and Methods:
Participants were selected specifically because they were identified as appearing to enjoy work. Each participant was interviewed using a script of questions and interviews were transcribed. Using Nvivo, the participants' answers were coded based on both constructs from previous research and recurring themes that appeared within the interviews (e.g. "Motivated to Learn").

Results:
Eight major themes emerged from data across fourteen in-depth interviews: Appreciation, Cooperation, Mutual Trust, Perception of Learning and Growth, Resources, Values Meaning and Motivation, Wellbeing and Self-Perception, and Work Structuring. Each major theme included multiple sub-themes (e.g. "Gratitude" fell within "Appreciation"). The most referenced joy inducing sub-themes were Cooperation/Connections, Value-Driven and Altruism respectively. The most referenced joy inhibiting sub-themes were Overwhelmed, Limited Resources and Perception of Unfairness.

Conclusions:
This study identified components of work life that are important to the joy of employees within UNR Med. Such qualitative analyses are imperative in order to improve the joy of employees who work within the medical field to increase both satisfaction and productivity. Several themes are relevant to institutions' work fostering an inclusive environment and creating feelings of belongingness and conversely support avoiding perceptions of unfairness.

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Evaluation of a Pilot Program to Implement Best Practices to Promote Diversity in the Search Process

Submission Type: Research Abstract
Accepted as: Poster
Region: WGEA

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Abstract Body:

Research Statement/Research Question:
To evaluate the impact of a search committee training package on committee members' perceived utility and on the diversity of applicants.

Background and relevance of the study:
The AAMC (2016) advocates for increasing diversity in academic medicine, highlighting the relationship between diversity and excellence. Despite this, those who are underrepresented in medicine continue to remain so. Faculty search committees operate as gatekeepers to academic medicine and a rich literature attests to how racial and gender bias may impact search committee decision making (Bertrand & Mullainathan, 2004; Carnes et al., 2015; Steinpres, Anders & Ritzke, 1999).

Design and Methods:
We implemented a 2-hour workshop on best practices in search processes, including implicit bias training. Participants completed two separate social validity surveys, after the workshop and search. Each search committee completed a Diversity Checklist (DCL) of various mandatory and best practices implemented during each search. Historical data on diversity of job applicants, interviewees, and hires over the 5-year period immediately preceding workshop implementation were compared with corresponding diversity data from the participant search committees for a 3-year period following implementation.

Results:
Social validity surveys indicated high ratings on various aspects of the workshop. Implementation of practices outlined in the DCL were high (94% mandatory, 87% best practices). Diversity data compared before and after implementation revealed significant increases in overall diversity (both race and gender) of applicants, interviewees, and those offered a position, in the time period following implementation.

Conclusions:
The training package demonstrated a significant improvement in diversity of applicants, candidates interviewed, and faculty hired after the workshop was implemented. Strengths include implementation of best practices to increase diversity in one training package. Limitations include lack of a control group and implementation at one institution only. Implementation of the training package is feasible, perceived to be socially valid by participants, and can be adopted by other medical schools.

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Qualitative Analysis of the Impact of the initial disruptions caused by the COVID-19 Pandemic on Medical Student Professional Identity Development

Submission Type: Research Abstract
Accepted as: Poster
Region: WGEA

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Abstract Body:

Research Statement/Research Question:
This study aims to investigate how initial disruptions from the COVID-19 pandemic impacted the professional identity development of medical students at the University of Utah School of Medicine (UUSOM).

Background and relevance of the study:
The development of a medical student's professional identity is a complex process that requires learners to integrate themselves into the medical profession while also embracing the identity as their own (1-4). The COVID-19 pandemic has altered the medical student experience in many ways, including disrupting clinical rotations schedules and limiting in-person learning experiences (5). Given the necessity of training physicians in the midst of a pandemic, it is key to understand how this situation is impacting students.

Design and Methods:
During the spring of 2020, we used an embedded mixed-methods design to investigate how students viewed their professional identities amidst the COVID-19 pandemic. We conducted Zoom-based focus groups with each cohort (MS1-MS4) at UUSOM (n=20). Recordings were transcribed and coded using thematic analysis. MS1s and MS2s responded to two survey questions that asked how personal and professional identity were related. Responses were analyzed using descriptive statistics.

Results:
Focus group data revealed that the pandemic impacted professional identity development of UUSOM students in novel ways. Participants disclosed various challenges but endorsed increased time for self-awareness and the reevaluation of their perception of roles within medicine, including increased sense of accountability and how physician responsibilities span beyond clinical care. Survey data showed nearly 50% of MS1s and MS2s perceived a shift in their personal and professional identity relationships between February and May 2020.

Conclusions:
Our analysis is important for understanding how global current events impact medical student professional identity development. This can be used to update existing professional identity development frameworks and produce curricula that support positive growth and flexibility during times of immense uncertainty or global disaster.

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How Do Allopathic Medical Schools Structure Assessment, Continuous Quality Improvement, Evaluation, and Accreditation?: Preliminary Results from a Qualitative Study

Submission Type: Research Abstract
Accepted as: Poster
Region: WGEA

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Abstract Body:

Research Statement/Research Question:
How do allopathic medical schools structure assessment, continuous quality improvement, evaluation, and accreditation?

Background and relevance of the study:
When a medical school conducts assessment, continuous quality improvement (CQI), evaluation, and accreditation (i.e., the complete quality assurance [QA] cycle in higher education), it reveals how it values and prioritizes its programs and activities. How is this done, with what resources, by whom, and for whom? There is a paucity of effort to systematically study these related activities, contributing to divergent practices that may affect institutional effectiveness and schools' ability to deliver on the promise of quality education and social good.

Design and Methods:
A qualitative study involving a literature review of the application of QA activities and interviews with representatives from 10 allopathic, US medical schools (a convenience sample) were completed to address this issue.

Results:
Although schools share the goal of achieving institutional effectiveness, the scope of and participants in QA activities (assessment: to understand learner performance; CQI: to monitor process implementation; evaluation: to maintain or change program design; accreditation: to determine a program's/school's integrity) differ. Four organizing frames were identified: assessment, CQI, evaluation, or accreditation alone; assessment and evaluation together; CQI and accreditation together; and CQI, evaluation, and accreditation together. Resources available for QA activities varied across interviewed schools. For instance, of the nine schools that reported staffing for assessment, numbers ranged from 1 to 8.5 full-time equivalents. A greater range of expertise (social science research, education) and skill sets (technology and administrative support) was found in assessment and evaluation compared to CQI and accreditation (administrative support).

Conclusions:
A gold standard for structuring QA activities was not found. Medical schools stand to benefit from understanding the distinct but complementary roles that QA activities play in their journeys toward institutional effectiveness. This would support more systematic efforts to identify transferable best practices and disseminate knowledge.

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Student experiences using a work-based assessment tool to obtain feedback during COVID-19

Submission Type: Research Abstract
Accepted as: Poster
Region: WGEA

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Abstract Body:

Research Statement/Research Question:
We explored how curricular changes during the COVID-19 pandemic affected core clerkship students' experiences with feedback using a work-based assessment (WBA) tool.

Background and relevance of the study:
The COVID-19 pandemic disrupted medical students' clinical curricula and likely their learning experiences. Direct observation and feedback from supervisors are key for clinical learning. In January 2020, our medical school implemented a new version of a work-based assessment (WBA) tool to enhance direct observation and feedback for clerkship students. The pandemic affected opportunities for tool usage, which could affect tool uptake and learning.

Design and Methods:
We interviewed clerkship students at the University of California, San Francisco before and during the COVID-19 pandemic. Curricular changes included a 4-month clerkship hiatus focused on examination preparation, followed by condensed rotations with some telemedicine. Students were required to collect twice-weekly WBAs, completed by supervisors or students. Interview questions addressed experiences with the WBA tool. Interviews were analyzed using inductive thematic analysis.

Results:
Eighteen students participated. Tool-related tensions that were emerging pre-COVID-19 persisted and were exacerbated during the pandemic. During COVID-19, students perceived increased difficulty obtaining feedback, which they attributed to shortened rotations, briefer relationships with observers, and limitations of telemedicine. Though many students expressed desire for supervisor-completed WBAs, almost all students opted to self-complete WBAs for ease in meeting requirements. Students described telemedicine experiences as generating insufficient physical exam feedback, and redundant feedback in domains most readily observed virtually, including note-writing and oral presentations. Longitudinal integrated clerkship students, who maintained yearlong relationships with preceptors, did not experience the same degree of increased difficulty eliciting WBAs.

Conclusions:
The COVID-19 pandemic interfered with students' ability to elicit feedback and the focus of feedback received, and highlighted vulnerabilities in the WBA tool. Students adapted by developing strategies to efficiently elicit feedback, namely self-completing WBAs. The implications of changes to feedback via WBA tools should be explored further.

References:
N/A

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Starting medical school remotely: the good, the bad, and the zoom fatigue

Submission Type: Research Abstract
Accepted as: Poster
Region: WGEA

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Abstract Body:

Research Statement/Research Question:
To evaluate the effect of remote education on undergraduate first-year medical students' learning.

Background and relevance of the study:
The UCSF Bridges curriculum is an integrated, organ systems-based curriculum. Pre-Covid-19, students learned via multiple modalities including: cadaveric dissection labs, lectures, small groups, online videos, interactive online modules, and case-based wrap-up sessions. Summative assessments are open-ended questions (OEQ), which require knowledge application (1).
Anatomy assessment includes OEQ and timed cadaveric identification practical exams. Here, we (1) describe adapting the first Bridges course to a virtual format, (2) compare student exam performance to previous years, and (3) report on student perceptions regarding these changes.

Design and Methods:
We collected MS1 OEQ and anatomy practical scores from the 2018-2019, 2019-2020 and 2020-2021 academic years. OEQs were scored by trained faculty on a scale of 1-6 using a holistic rubric: "meets expectations" (5,6), "borderline" (3,4), or "does not meet expectations" (1,2). Identical OEQ exams were used in 2018 and 2020. OEQ scores were averaged and analyzed using an independent samples t-test. Anatomy practical scores were analyzed in SPSS software using an independent samples t-test. Survey data are being collected and comments will be analyzed for emerging themes.

Results:
Mean OEQ performance was not different between cohorts (mean: 88%; SD ± 5 for 2018 & 2020). The 2020 MS1s virtual anatomy practical exam performance was significantly higher compared to the 2019 MS1s cadaveric exam performance (p < 0.001). Survey data highlighted zoom fatigue and desire for community building.

Conclusions:
Remote instruction did not decrease exam performance for the OEQ-based summative examination, while the anatomy practical exam performance increased significantly, suggesting knowledge transfer can occur via remote teaching. However, we acknowledge that the practical exam formats were not equivalent. The reported stress levels for the 2020 MS1s were higher, and MS1s missed "tips to succeed" typically passed along in person via peer-to-peer interactions.

References:
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An Innovative Approach to Teaching Cross-Cultural Communication Among Dental Students

Submission Type: Research Abstract
Accepted as: Poster
Region: WGEA

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Abstract Body:

Research Statement/Research Question:
Create and evaluate an interactive Cross-Cultural Communication (CCC) educational intervention for Dental Students (DS)

Background and relevance of the study:
Racial and ethnic minorities remain underrepresented within the healthcare workforce generally and within the dental profession. Consequentially, professional organizations including the American Dental Association and Commission on Dental Accreditation identified the importance of cultural competency training in dental education. One essential component of providing care for patients of diverse backgrounds is culturally-sensitive, patient- and family-centered communication. To address this need, we developed and implemented an interactive, two-hour CCC educational session for DS. This study describes the intervention and provides evaluation data on its effectiveness.

Design and Methods:
Our session employed dyad training, patient-provider role play, education about Kleinman's Explanatory Model, and introduced a new model for negotiating across cultures that can be broadly applied to various aspects of patients' culture. Learners included 51 first-year (24) and third-year (27) DS. Evaluation compared students' pre-/post-intervention responses to a modified Health Belief Attitudes Survey (HBAS), which measured four domains: Opinion, Belief, Context, and Quality.

Results:
For the first-year students, the mean differences between the pre- and post-intervention surveys for the domains of Opinion, Belief, Context, and Quality were all statistically significant ($P < 0.05$). For the third-year students, there was a similar result as compared to the first-year students, with the exception for the domain of Quality (not significant, $p=0.083$).

Conclusions:
The educational paradigm employed in this study, especially the model for negotiating across cultures, fills a curricular gap in effectively teaching CCC among DS. Moreover, the intervention provides a model that can be applied across health professions education. Limitations include the short-term self-report nature of the instrument which may carry bias. Additionally, the study did not explore the long-term retention of knowledge or performance in the clinical settings.

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Co-Learning: How Faculty and Trainees Learn Together in the Workplace

Submission Type: Research Abstract
Accepted as: Poster
Region: WGEA

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Abstract Body:

Research Statement/Research Question:
How do faculty and trainees learn together in the clinical workplace?

Background and relevance of the study:
Co-learning, defined as faculty and trainees learning together, occurs often in clinical workplaces. Conceptual models of workplace learning focus primarily on individual learning (1-3), leaving a gap in understanding of co-learning and its value. Co-learning gives faculty and trainees opportunities to co-construct knowledge, which may mitigate power differentials, build trust, and foster inclusive learning environments (4-7).

Design and Methods:
Using a constructivist grounded theory approach, we interviewed 34 clinician-educators from 10 specialties to explore how co-learning occurs in their practice, how they perceive its value, and what barriers and facilitators they identify. Through iterative analysis, we developed a conceptual model of co-learning.

Results:
Our model of co-learning in the workplace is similar to models of individual workplace learning processes in that it involves identifying a learning opportunity and engaging in learning activity to bring about a learning outcome; however, our model adds symmetry as a key dimension. Symmetry reflects the degree to which each learner (faculty or trainee) engages in the co-learning process. In our model, faculty, trainees, or both first identify learning opportunities during work-related activities. Next, they choose strategies for learning that lead to interpretation and construction of meaning. These strategies may occur together or separately, but involve some interactive discussion that produces learning outcomes for both parties such as knowledge or insight. Our findings suggest that symmetric engagement throughout co-learning fosters a co-constructive learning process, which may help fully realize the benefits of co-learning. Participants universally viewed co-learning as valuable and felt it helped foster an inclusive learning environment.

Conclusions:
Co-learning adds the concept of symmetry to models of workplace learning and helps consider how we can engage all team members to co-construct workplace learning.

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Workshops

Using Mattering to promote Inclusion, Diversity, Wellbeing and Success in Medical Education

Submission Type: Workshop
Accepted as: Workshop
Region: CGEA

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Abstract Body:

Rationale:

Do you perceive you matter to those with whom you work? Mattering is a psychological concept that is the foundation of relationships with other individuals, teams and institutions. When we perceive we matter, we recognize our value, are more engaged and less likely to experience depression and burnout. Creating an environment that promotes the expression of mattering can positively impact the feeling of inclusion and promote diversity and acceptance of ideas. Medical educators are challenged to explicitly address ways to create inclusive, diverse and equitable learning environments. This workshop will introduce the concept of mattering at three levels (interpersonal, team and organization) and present example activities and scripts that can make people feel they matter at each level. Participants will then work in facilitated small groups to identify additional activities that promote a sense of mattering with key ideas shared during the large group activity. Participants will be asked to commit to piloting at least one of the mattering ideas upon their return to their own institution.

Learning Objectives:

1. List the importance of mattering at interpersonal, team and organizational levels.
2. Identify specific activities that address mattering at each level.
3. Commit to piloting at least one activity at the individual, team, or organizational level in the workplace.

Session Methods and Format:

3 min Introduce objectives and facilitators

2 min Prompt: When did you know you mattered?

- Participants share times when they knew they mattered in chat feature.

7 min Importance of mattering as individuals, teams, organizations

- Presentation of evidence on impact of mattering and model of interpersonal, organizational and societal mattering

9 min Examples of activities that enhance mattering

- Three facilitators will share how they use the model to identify potential activities that enhance mattering

20 min Small group work to complete worksheet

- Participants will work together to identify additional activities that promote mattering specific to their organizations and teams.
- Facilitators will organize ideas into themes and help group select top 1-2 to report out.

15 min Large group sharing and discussion of ideas

- Each group shares innovative ideas on screen creating a combined listing that can enhance mattering at each of the three levels

4 min Wrap up and commitment to pilot one activity

- Participants will be asked commit to piloting a mattering activity within their workplace using the chat feature.

Online Facilitation:
Participants will use the chat function to answer the initial prompt. Presentations on mattering will include an interactive slide presentation with Q&A via chat. Small group work occurs in breakout rooms. If Mural (or similar application) is available, small group work will occur using the post-it note feature for brainstorming, allowing all participants an opportunity to interact. Each of the breakout groups work showcased in Mural will be used during large group sharing to form a single list that can be distributed. Commitment to piloting an activity will occur in the chat feature allowing preservation of responses. If breakouts crash, worksheets can be completed by individuals and facilitated discussion can assimilate results. Whiteboard features can replace Mural as needed.

Experience:

- Karen Marcdante, MD has been active clinician, medical educator and scholar for >3 decades, serving in multiple teaching, faculty development, and leadership roles resulting in over 200 peer-reviewed and invited national workshops, presentations and publications.
- Deborah "Deb" Simpson, PhD is an experienced presenter (>700 invited/peer reviewed sessions) who blends evidence and faculty/organization needs with humor/innovation to address gnarly situations in faculty development/medical education.
- Terry Frederick has led a variety educational administrative teams' across the continuum for more than 20 years with scholarly and engaging presentations at the multiple professional societies highlighting this work.
- Michael T. Braun, PhD, is an educational researcher, program manager and skilled presenter able to find common language and use humor to transform scientific evidence into policy and procedure change for educators and social service providers over the last 15 years.

References:
1. Flett GL. The Psychology of Mattering. Academic Press, Elsevier, Inc. 2018.
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https://repository.upenn.edu/cgi/viewcontent.cgi?article=1148&context=mapp_capstone
3. Haizlip JA & Plews-Ogan M. In M. Plews- Ogan & G. Beyt. (Eds.) Wisdom leadership in academic health science centers: Leading positive change. 2014: p.135-157. London: Radcliffe Publishing, Ltd.

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The role of coaching during transitions across the medical education continuum

Submission Type: Workshop
Accepted as: Workshop
Region: CGEA

Authors:
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Maya Hammoud, University of Michigan Medical School
Amy Miller Juve, Oregon Health & Science University School of Medicine
Margaret Wolff, University of Michigan Medical School
Abigail Winkel, New York University School of Medicine

Abstract Body:
Rationale:
Coaching is becoming increasingly utilized in the medical education continuum. Coaching programs in medical schools and residency programs continue to be on the rise. From coaching on clinical and surgical skills to coaching on academic performance, advancement, and professional identity formation, often times, these coaching programs tend not to be customized specifically for transitions. Transitions across the medical education continuum can be very challenging and stressful and might require different models than traditional academic coaching. This session will address the role of coaching in supporting learners across the transitions and present examples of current coaching programs helping learners.

Learning Objectives:
Identify the stressors and challenges to learners during transitions across the medical education continuum

- Articulate the benefits of coaching, as unique from mentoring and advising, in supporting professional identity formation and resilience in learners
- Describe 3 coaching models which are appropriate to support learners through the transitions
- List resources available for educators who are coaching learners or developing coaching programs

Session Methods and Format:
Each speaker will cover a distinct coaching program for learners created specifically around the transitions and outline its role in professional identity formation. In each program, we intentionally identify specific coaching models, theories and tools to use that we believe best address the challenges facing this stage of development. The University of Michigan Medical School pairs entering students with coaches to particularly work through the challenges of transitioning to medical school. At Virginia Commonwealth University, Entrustable Professional Activity (EPA) coaching program focuses on transitioning the learner from the pre-clinical curriculum to the clinical one, covering such themes as "becoming trustworthy" and achieving clinical entrustment in a competency-based curriculum. Another separate coaching program pairs graduating students who are headed to surgical residencies with surgical faculty coaches, who coach for wellness and work with the learner to create Individualized Learning Plans that the students will take with them to their residencies. At NYU Grossman School of Medicine coaching is enhancing the transition ofmedical students to residents by faculty coaches who oversee and support learner-driven education and training goals.

At Oregon Health and Science University, the anesthesiology department provides each intern with a coach to help them develop their

professional identity as an anesthesiologist.

Session plan

- 10 minutes: Introduction and overview of the session by the facilitator; didactic component in which several prevailing coaching theories and tools are summarized
- 30 minutes: Speakers showcase their coaching for transitions innovations and the theories and structure they chose to adopt.
- 15 minutes: Small group work—participants will fill out a worksheet to begin developing a program in which they identify a coaching need in their learners and choose relevant and high-yield strategies a solution could employ at their own institutions
- 10 minutes: Small group report out and wrap up including outlining resources.

Online Facilitation:
Four of the five team members have already successfully conducted several coaching workshops this year using Zoom and are facile with this technology.As the speakers take turns, the other team members are familiar with moderating the chat box. We will open with an icebreaker where we ask participants to introduce themselves asynchronously in the chat and to be polled to identify what transitions they work with at their own programs and what they hope to accomplish in the workshop. This will allow the team to speak more specifically to the audience. For the small group work, participants will be placed in virtual breakout rooms. The worksheet will be posted in the chat box so that participants can access it in real time on their computers. As a backup, any of the session can be done without the use of slides or breakout technology.

Experience:

- Nicole Deiorio, MD is a certified leadership coach and has created undergraduate medical academic coaching programs at two institutions
- Maya Hammoud, MD, MBA is an executive coach and the AMA's special adviser on medical education innovation
- Amy Miller Juve, EdD runs the GME coaching program at OHSU
- Margaret Wolff MD, MHPE is an executive coach and published in the realm of academic coaching in UME, as are the other authors
- Abigail Winkel, MD, MHPE co-directs the transition to residency course at NYU and studies resilience, life-long learning, motivation and self-assessment.

References:

1. Sargeant J, Lockyer J, Mann K, Holmboe E, Silver I, Armson H, et al. Facilitated reflective performance feedback: developing an evidence- and theory-based model that builds relationship, explores reactions and content, and coaches for performance change (R2C2). Acad Med 2015; 90 :1698–706.

2. Gifford KA, Fall LH. Doctor coach: a deliberate practice approach to teaching and learning clinical skills, Acad Med 2014; 89)2): 272-6.
3. Gazelle G, Liebschutz JM, Riess H. Physician Burnout: Coaching a Way Out. J Gen Intern Med 2015; 30(40): 508-13.
4. Deiorio NM, Hammoud MM. Coaching in Medical Education (Handbook) 1st ed. Chicago, IL: AMA; 2017. https://www.ama-assn.org/media/52126/download
5. Wolff M, Jackson J, Hammoud MM. It Takes Two: A Guide to Being a Good Coachee. 1st ed. Chicago, IL: AMA; 2019. https://www.ama-assn.org/media/52121/download

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Developing master adaptive learners in medical school

Submission Type: Workshop
Accepted as: Workshop
Region: CGEA

Authors:
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Migdalisel Colon-Berlingeri, Michigan State University College of Human Medicine
Dianne Wagner, Michigan State University College of Human Medicine
Jonathan Gold, Michigan State University College of Human Medicine
Sathyanarayan Sudhanthar, Michigan State University College of Human Medicine

Abstract Body:
Rationale:
The rapid pace of change in medicine requires physicians to access, evaluate, and apply new information on nearly a daily basis. Traditional medical school curricula, with their emphasis on course packs and multiple-choice question examinations, have not always prepared students to be such nimble learners.

In 2016, the College of Human Medicine launched its new Shared Discovery Curriculum, based on constructivist learning theory and featuring early clinical experiences integrated with scientific learning and competency-based assessment. Two of the college's core competencies – Rationality and Transformation – establish expectations for student reflection, ability to appraise and assimilate evidence from scientific studies, and self-directed lifelong learning. Each of these has been further described by milestones anchored to courses across the curriculum.

The skills we described align well with Cutrer et. al.'s model of the master adaptive learner, published in 2017. In their model, learners use metacognitive skills to assess, adjust, plan, and learn in response to changing needs for knowledge and skill.

The purpose of this workshop is to allow participants to deconstruct the skills of the master adaptive learner into observable milestones, and to strategically identify opportunities to integrate experiences and assessments to reinforce these behaviors across the continuum.

Learning Objectives:

1. Describe the knowledge, skills, and attitudes of a master adaptive learner;
2. Draft milestones for a developing adaptive learner;
3. Describe formative experiences to support adaptive learning;
4. Describe approaches for assessing students' adaptive learning skills.

Session Methods and Format:

1. Overview of the Master Adaptive Learner (10 mins)
2. Participants: Draft milestones for becoming a Master Adaptive Learner (10 mins)
3. Report out on milestones drafts (10 mins)
4. Participants: Brainstorm formative experiences to support skills development (10 mins)
5. Participants: Brainstorm methods for assessing adaptive learning skills (10 mins)
6. Report out on ideas for formative experiences and assessment (10 mins)

Online Facilitation:
We will utilize a mix of large group discussions and breakout rooms (the latter designated with "Participants:" in our description of the session methods). Facilitators for the breakout rooms will

provide participants with a link to Google Jamboard to collaboratively capture ideas and discussion. The Jamboard will be reviewed and modified during "report out" periods in the main room. The co-authors will serve as breakout room facilitators and take turns serving as chat moderators. Participants will be able to save copies of the introductory materials and Jamboard for use at their home institutions.

Experience:

- Dr. Laird-Fick is director of assessment for the Shared Discovery Curriculum, a former internal medicine residency program director, a former internal medicine clerkship director, and a general internist.
- Dr. Colon-Berlingeri is the director of our Early Clinical Experience (M1 year) and a physiologist.
- Dr. Wagner is our interim Senior Associate Dean for Academic Affairs, Associate. Dean for Undergraduate Medical Education, and a general internist.
- Dr. Gold is the director of the Shared Discovery Curriculum's Learning Academy, a former pediatrics clerkship director, and a general pediatrician.
- Dr. Sudhanthar is chief of one of the four Learning Societies within our Learning Academy, a former clinical skills director, and a general pediatrician.

References:

1. SCRIPT and the Shared Discovery Curriculum. Michigan State University College of Human Medicine. Available at https://curriculum.chm.msu.edu/curricular-content/script-competencies. Accessed December 12, 2020.
2. Cutrer WB, Miller B, Pusic MV, Mejicano G, Mangrulkar RS, et al. Fostering the Development of Master Adaptive Learners: A Conceptual Model to Guide Skill Acquisition in Medical Education. Acad Med. 2017;92(1):70-75.
3. Edgar L, McLean S, Hogan SO, Hamstra S, Holmboe ES. The Milestones Guidebook Version 2020. Accreditation Council for Graduate Medical Education. Available at https://www.acgme.org/Portals/0/MilestonesGuidebook.pdf?ver=2020-06-11-100958-330. Accessed December 12, 2020.

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What Just Happened? Microaggressions in the Learning Environment

Submission Type: Workshop
Accepted as: Workshop
Region: CGEA

Authors:
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Jamie Hess, University of Wisconsin School of Medicine and Public Health
Amy Becker, University of Wisconsin School of Medicine and Public Health
Christine Seibert, University of Wisconsin School of Medicine and Public Health

Abstract Body:

Rationale:

Medical education has a key role in advancing health equity through the content that is delivered, as well as the way that content is delivered. Efforts to promote diversity within medicine require an inclusive and equitable environment. Microaggressions have been defined as "the everyday verbal, nonverbal, and environmental slights, snubs, or insults, whether intentional or unintentional, which communicate hostile, derogatory, or negative messages to target persons based solely upon their marginalized group membership."1 Medical literature confirms that medical students experience microaggressions,2 occurring in both preclinical and clinical education settings, and impacting learners across a variety of social identities. The consequences of microaggressions can include negative psychological and academic outcomes for the target of the microaggression3; and can additionally have far-reaching consequences beyond the individual student, including medical student cohorts, medical teams, patients and populations. Faculty must be skilled in identifying microaggressions, thus ensuring that they do not serve as an aggressor while also acting as effective bystanders that can interrupt microaggressions. The purpose of this workshop is to teach medical school educators skills in identifying and addressing microaggressions. We will actively engage participants by breaking down real-life examples of microaggressions, as well as discuss ways to address microaggressions in small groups.

Learning Objectives:

- Define what is meant by a microaggression
- Discuss how microaggressions impact the learning environment
- Develop skills to address microaggression in medical education

Session Methods and Format:

We propose an interactive workshop in which facilitators will lead attendees through discussion and discovery. Three video clips from popular media will introduce each thematic section of the workshop, with clip one highlighting a microaggression in medicine, clip two highlighting the impact of microaggressions, and clip three examining a bystander response to microaggressions. In the first twenty minutes of the session, the facilitators will introduce the session, actively engage participants in establishing shared ground rules for the session, and facilitate a discussion around the definition and identifying features of microaggressions. The following twenty minutes of the session focus on the impact of microaggressions. Attendees will break out into small groups to examine real-life examples of microaggressions that occurred in preclinical and clinical settings and discuss the potential messages being sent to medical students and their impacts; these discussions will then be debriefed with the larger group. Finally, the third section of the session will engage participants in a discussion focused on how best to respond to microaggressions in the learning environment. Participants will again convene into breakout groups and discuss microaggressions in a medical educational setting, focusing on when

and how educators can respond to best support learners. The session will conclude with a large group debrief of best practice strategies in responding to microaggressions and brief question and answer period.

Online Facilitation:
All facilitators are experienced in teaching and facilitating online sessions. We plan to use a variety of online modalities to engage workshop participants, including breakout rooms, the chat feature, verbal responses from remote participants, and shared screens. While each twenty-minute section of the workshop is led by one facilitator, the other two facilitators will support the oversight of questions in the chat box and time management. Additionally, all three facilitators will engage with participants in the breakout room discussion. PowerPoint material and case examples will be provided to participants in advance of the session to participants to ensure they have access to material in the case that screen sharing is not possible.

Experience:
The three facilitators have experience facilitating this workshop together, having successfully led approximately 40 attendees through this session content during the University of Wisconsin School of Medicine and Public Health 2019 Medical Education Day.

- Scott Mead, MD is an internist and oversees the clinical skills education and the professionalism and ethics threads for the University of Wisconsin School of Medicine and Public Health medical student curriculum.
- Jamie Hess, MD is an emergency medicine physician who oversees interprofessional education and the quality improvement and patient safety threads for the University of Wisconsin School of Medicine and Public Health medical student curriculum.
- Parvathy Pillai, MD, MPH is a preventive medicine physician and oversees the public health thread for the University of Wisconsin School of Medicine and Public Health medical student curriculum.

References:
1. Sue, D. (2010, November 17). Microaggressions: More Than Just Race. Retrieved December 13, 2020, from https://www.psychologytoday.com/us/blog/microaggressions-in-everyday-life/201011/microaggressions-more-just-race
2. Ackerman-Barger, K., Boatright, D., Gonzalez-Colaso, R., Orozco, R., & Latimore, D. (2020). Seeking Inclusion Excellence: Understanding Racial Microaggressions as Experienced by Underrepresented Medical and Nursing Students. Academic medicine : journal of the Association of American Medical Colleges, 95(5), 758–763. https://doi.org/10.1097/ACM.0000000000003077
3. Byrd, C. (2018). Microaggressions Self-Defense: A Role-Playing Workshop for Responding to Microaggressions. Social Sciences, 7(6), 96. doi:10.3390/socsci7060096

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7 Strategies to Develop Clinical Reasoning with Early Medical Learners: Instructional Scaffolding with Visual, Cognitive, and Cooperative Learning

Submission Type: Workshop
Accepted as: Workshop
Region: CGEA

Authors:
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Erin Miller, Wayne State University School of Medicine

Abstract Body:

Rationale:
It is challenging to engage early medical learners in meaningful clinical reasoning without prerequisite knowledge in pathophysiology. As a result, early clinical skills curriculum can be heavily task–driven and clinical reasoning is delayed or develops independently, as part of a hidden curriculum. To ensure that reasoning drives the learning, it is critical to flip the focus from task completion to higher-level thinking. By providing more direct and scaffolded instruction on clinical reasoning, early learners begin to build context for history-taking, physical exam maneuvers, note-writing, and oral presentation skills practiced in the pre-clerkship curriculum. Repeated cycles of varied practice, feedback, and reflection enable learners to leave every simulation experience understanding the WHY behind WHAT they are doing.

Learning Objectives:

1. Discuss challenges to clinical reasoning development with early medical learners.
2. Evaluate visual, cognitive, and cooperative learning strategies for advancing clinical reasoning.
3. Brainstorm opportunities to implement 2 new strategies at home institutions.

Session Methods and Format:
05 min: Introduction – Background, large group inventory / poll / discussion of challenges
40 min: Small Group Breakouts – Use case vignettes to explore visual, cognitive, and cooperative learning strategies
05 min: Summary of Strategies and connection to Best Practices
10 min: Large Group Brainstorm / Takeaways

Online Facilitation:
Zoom breakout rooms, Zoom whiteboards, Zoom chat, Zoom poll

Backup handouts to share via Zoom chat if technology fails

Experience:

- Sonal C. Patel, MA: Instructional Designer, Wayne State University School of Medicine
- Erin Miller, MD: Assistant Professor, Course Director for Clinical Skills I longitudinal course, Wayne State University School of Medicine

References:
1. Dean Parmelee , Brenda Roman , Irina Overman & Maryam Alizadeh (2020): The lecture-free curriculum: Setting the stage for life-long learning: AMEE Guide No. 135, Medical Teacher, DOI: 10.1080/0142159X.2020.1789083
2. Maris F. Cutting & Norma Susswein Saks (2012) Twelve tips for utilizing principles of learning to support medical education, Medical Teacher, 34:1, 20-24, DOI:10.3109/0142159X.2011.558143
3. Reg Dennick (2012) Twelve tips for incorporating educational theory into teaching practices, Medical Teacher, 34:8, 618-624, DOI: 10.3109/0142159X.2012.668244

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The Scholarly Writing Workshop for Most of Us: Basic & Powerful Strategies for Advancing Your Writing

Submission Type: Workshop
Accepted as: Workshop
Region: NEGEA

Authors:
Rebecca Blanchard, University of Massachusetts Medical School - Baystate
Leigh Ann Holterman, Larner College of Medicine

Abstract Body:
Rationale:
Health professions educators are critical thinkers, consistent innovators, and insightful researchers. In order for any of this work to reach a broader audience, however, they must also be skilled authors.(1)

Unfortunately, scholarly writing does not typically enjoy a consistent spot within the curriculum of undergraduate or graduate health professions education. While teaching and research skills are reinforced across the continuum, the art and skill of writing remains elusive. At best, rhetoric skills may have been developed in structured undergraduate college programs or through deliberate practice. At worst, the fear of writing may have prevented great ideas from ever being put to paper. Given the vulnerability that health professions educators might feel with writing – especially those voices that are underrepresented in healthcare, considerable attention must be paid to the cultivation of and conversation around these skills.

In this workshop, we present a schema for authors to advance their own scholarly writing and to give feedback to others. This interactive session empowers participants to advance themselves and their peers by demonstrating simple yet effective strategies that blend the work of prominent rhetoricians in the field (1,2,3) and the facilitators' experiences as authors and mentors.

Learning Objectives:

1. Describe a schema for giving feedback on scholarly writing
2. Apply strategies for editing and improving your own writing
3. Increase confidence and comfort in giving and receiving feedback on writing
4. Discuss methods for successful time management and increased scholarly output

Session Methods and Format:
(5 min) Introductions and Poll of participants' comfort with scholarly writing and editing; Orientation to session: Drs. Holterman and Blanchard will alternate as main presenter and chat monitor for each section below. All small group instructions will be posted to chat.

(5 min) Tip #1 - Write. Participants will be given 4 minutes to write freely based on the prompt: "What is an idea or encounter you had at work that taught you something?" The amount that gets written shows the power of uninterrupted time.

(10 min) Tip #2 - Big Editing: Find your purpose. Participants will be asked to write a purpose statement based on what they've written (or intended to write). In breakout rooms of 3-4, participants will each: Introduce themselves, share their purpose statement and then remain silent while their group members each list 1-2 things they would like to know or questions they have about the purpose. This process highlights the value in sharing your ideas with others early on.

(3 min) Return to Full group, then 2-word chat debrief: What was that like for you?

(7 min) Brief Lecture with PPT: Introduction to the editing process, including Big (structure, story, tone), Medium (paragraph order, sentence structure, verb tense), and Small (word choice, style, verb voice).(2,3)

(7 min) Tip #3 - Medium & Small Editing: In the same breakout groups, participants will be given a taste of Medium and small editing by identifying relevant sentences in their work and then in groups re-writing two sentences; 1) change 1 passive into active voice and 2) rewrite 1 sentence starting with "There are…" or "It is…"

(3 min) In Full Group, 1-2 word chat Debrief: What was that like for you?

(10 Min) Tip #4: Strategizing for Increased Output: participants will review the S.M.A.R.T. (specific, measureable, achievable, relevant, time-limited) framework for goal setting and apply it to time management for scholarly writing. Additional tips for increasing scholarly output will be shared before participants will be asked to build on this list by annotating on a document with their own recommendations or echoing those of their peers. This completed document will be distributed to participants along with additional resources.

(10 min) Debrief & Evaluation – Debrief. Then, end with each participant asked to identify one intention for moving forward and then "set" their intention by sharing it in the chat.

Online Facilitation:
Specific virtual considerations and use of technology described in the session Methods and Format. Both facilitators have extensive experience teaching in the virtual space and have designed activities to allow individual, small group, chat, and large group interaction. Attention will be paid to the needs and size of the group to be flexible and sustain active engagement.

Experience:

- An associate professor at UMMS-Baystate, Dr. Blanchard publishes in peer reviewed journals about health professions education, mentors investigators on scholarly writing, and withstands copious editing of her work.
- Dr. Holterman, an assistant professor at LCOM, publishes manuscripts mentors faculty and students in research and scholarly writing, previously worked as a writing tutor, and credits her graduate school mentor with her success in giving and receiving edits.

References:

1. Varpio, L., Driessen, E., Maggio, L. et al. Advice for authors from the editors of Perspectives on Medical Education: Getting your research published. Perspect Med Educ (2018) 7: 343. DOI: 10.1007.s40037-018-0483-0
2.Watling, C. & Lingard, L. Giving feedback on others' writing. Perspect Med Educ (2019) 8: 25. DOI: 10.1007.s40037-018-0492-z
3. Watling C. The three 'S's of editing: story, structure, and style. Perspect Med Educ. 2016;5:300–2.
4. Lingard, L. Joining a conversation. The problem-gap-hook heuristic. Perspect Med Educ (2015) 4: 252. DOI:10.1007/s40037-015-0211-y

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A Roadmap for Publishing Health Professions Education Scholarship

Submission Type: Workshop
Accepted as: Workshop
Region: NEGEA

Authors:
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Lauren Maggio, Uniformed Services University of the Health Sciences F. Edward Hebert School of Medicine
Bridget O'Brien, University of California, San Francisco, School of Medicine

Abstract Body:

Rationale:
Publishing your health professions education (HPE) work in a peer-reviewed journal helps disseminate important findings and ideas to a wide audience. Publications are key criteria for promotion and tenure decisions. Yet most journals receive large numbers of submissions and have low acceptance rates. At the same time, the number of venues for publishing has grown as has the variety of publication types, from one-page infographics to comprehensive literature reviews. In this workshop, the presenters will introduce participants to the evolving landscape of publishing in HPE, provide examples of how to think through the available publishing opportunities, and highlight resources authors can use to prepare their work for submission.

Learning Objectives:
At the end of this workshop, participants should be able to:

(1) Describe a variety of dissemination venues for publishing scholarship in HPE;
(2) Select the appropriate publication type for their scholarship; and
(3) Identify the resources available to guide their publication preparation.

Session Methods and Format:

- 25-minute presentation on the HPE publishing landscape, publishing opportunities, and resources for authors (material distribution, screen sharing, polling)
- 15-minute large group exercise with publishing scenarios (Bingo, Jeopardy, or Poll Everywhere activity)
- 20-minute Q&A with the presenters and 1-2 additional HPE journal editors (audio, chat)

Online Facilitation:
During the first part of the workshop, two speakers (Maggio, O'Brien) will use screen sharing to show slides with information on the HPE publishing landscape, publishing opportunities, and author resources. The third speaker (Gallo) will distribute materials in the chat, including the author resources available online. Then all three speakers will present publishing scenarios in a "Where/How should you publish?" exercise and offer feedback on participants' responses. During the Q&A, one speaker (Gallo) will moderate questions and all speakers as well as invited HPE journal editors in the audience will respond to participants' questions.

Experience:

- Toni Gallo is a senior staff editor with Academic Medicine and has led writing workshops at regional and national meetings.
- Lauren Maggio is the Deputy Editor-in-Chief of Perspectives on Medical Education and a professor of Health Professions Education and Medicine at the Uniformed Services University.

She has led multiple workshops on publishing that draw on her background in information science and education.

- Bridget O'Brien is a Deputy Editor at Academic Medicine and a professor of medicine at the University of California, San Francisco. She has given presentations and facilitated workshops on various aspects of scholarship in health professions education.

References:

N/A

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Evaluating Curricular Materials to Mitigate Bias: Looking thru the Structural and Social Determinants of Health Lens

Submission Type: Workshop
Accepted as: Workshop
Region: NEGEA

Authors:
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Janice John, Donald and Barbara Zucker School of Medicineat Hofstra/Northwell
Katharine Yamulla, New York Medical College

Abstract Body:
Rationale:
The need to train healthcare professionals to be aware of and mitigate bias in the healthcare system has become an urgent imperative. We know that social determinants of health (SDoH) contribute to health problems and healthcare disparities. Unfortunately, research has shown that the pedagogical focus on cultural competence has not improved healthcare outcomes. Despite efforts to incorporate these topics into medical curricula, the "hidden curriculum" of poor role modeling prevails. Upon review of their curricular materials for teaching and assessment, many can find examples of previously unrecognized bias. This interactive workshop introduces a paradigm shift focused on structural competency which incorporates the structural vulnerability of patients and a level of accountability of clinicians and other team members.

To fully embrace this framework, we must ensure that educational materials including lecture content, readings, multiple choice questions (MCQ), case-vignettes and observed structured clinical encounter (OSCE) materials, are critically appraised for bias and that they recognize the structural challenges our patients face. This workshop seeks to describe this new paradigm and related concepts while empowering participants with tools that will address their educational needs to mitigate bias.

Learning Objectives:

1. Compare and contrast: cultural competence and cultural vulnerability; structural competence, structural vulnerability and structural humility
2. Apply key concepts for addressing bias when creating and revising clinical cases for teaching and assessment
3. Critically appraise and revise clinical cases/curricular content to promote inclusion and mitigate bias

Session Methods and Format:
Structure Time Description Virtual Workshop Facilitation (min.)

1. Icebreaker/Introductions. 5 min

Use spotlight feature and host has requested you to unmute to select individuals to introduce themselves and answer icebreaker

2. Overview. 10 min

- Framing
- Terminology and Definitions

Share screen to share slides. Utilize chat function, with one author monitoring

3. Introduction: Tool. 5 min

- Discussion: Caruso Tool components
- Instructions for activity

Share screen to share slides. chat box will be used to share documents 1) PDF document of the Caruso tool 2) curricular materials* with participants.

4. Small Group: Interactive Activity. 20 min

- Participants break into 3 groups
- Each group will apply the Caruso Tool to one of three curricular materials (*MCQs/case vignette/ OSCE case)

Each of the three breakout rooms will have one author facilitating

5. Large Group: Debrief Activity. 10 min

- Discuss challenges
- Lessons learned

Return to main room and stop share so all participants can see each other well

One participant from each group will report out

One author will scribe challenges and lessons learned

6. Large Group: Share Ideas. 10 min

- Share solutions
- Promote collaboration

Author will share screen – sharing the slide with containing Challenges and Lessons Learned And instruct participants to unmute and share solutions.

- Reflect on take-away points

Participants will place take away points in the chat box, that one author will read aloud

Total Time 60 minutes

Online Facilitation:
All authors have extensive experience leading interactive workshops over virtual media. Above description includes strategies to adapt to the virtual medium.

- Breakout groups for small group activities
- Chat, white board functions for participants to share questions, thoughts.
- Share screen to share slides,tools
- Link to primary tool needed so participants can download.

Experience:

- Felise Milan, MD, is a Professor of Medicine at Albert Einstein College of Medicine, Director of the Clinical Skills curriculum, member of the HRSA funded NCEAS (The National Collaborative for Education to Address the Social Determinants of Health). She is serving as a co-PI on an NIH grant to create performance based assessments on bias in healthcare and as an internal grant

reviewer on an institutional Reimagining Residency grant from the AMA -Residency Training to Effectively Address Social Determinants of Health: Applying a Curricular Framework Across Four Primary Care Specialties.

- Katharine Yamulla, MA, CHSE, Senior Director of Competency Based Assessment and Clinical Skills Education and Director of the Clinical Skills Center at New York Medical College, has presented numerous peer reviewed workshops at IMSH, ASPE, STFM and DOCS on the topics of Collaborative Feedback, Student Wellness, and Advanced Standardized Training Techniques.
- Janice John, DO, MS, MPH, Assistant Professor of Science Education and Pediatrics, is Co-director of Clinical Skills at the Zucker School of Medicine at Hofstra/Northwell. She provides faculty development on topics such as unconscious bias, inclusion and belonging. She has led her team to create clinical skills exams that are more inclusive and representative of diversity. Through her community engagement, she has developed service learning opportunities for medical students. She partners to oversee the health equity component of the school's curriculum.

References:

1. Bourgois, Philippe, Holmes, Seth M., Sue, Kim & Quesada, James. "Structural Vulnerability: Operationalizing the Concept to Address Health Disparities in Clinical Care." Academic Medicine 92, no. 3 (March 2017): 299-307.
2. Caruso Brown, Amy E., Hobart, Travis R.,Botash, Anne S., Germain, Lauren J. "Can a checklist ameliorate implicit bias in medical education?" Th Association for the Study of Medical Education, (March 2019): 498-528. (https://redcap.upstate.edu/surveys/?s=KADLRXK8WE)
3. Krishnan, Aparna, Rabinowitz, Ziminsky, Ariana, Scott, Stephen M., Chretien, Katherine C. "Addressing Race, Culture, and Structural Inequality in Medical Education." Academic Medicine 94, no. 4 (April 2019): 550-555.

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Identifying and Interrupting Microaggressions

Submission Type: Workshop
Accepted as: Workshop
Region: NEGEA

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Melissa Pawelczak, Donald and Barbara Zucker School of Medicine at Hofstra/Northwell
Mersema Abate, Donald and Barbara Zucker School of Medicine at Hofstra/Northwell
Robert Roswell, Donald and Barbara Zucker School of Medicine at Hofstra/Northwell

Abstract Body:

Rationale:
Understanding how microaggressions impact feelings of inclusion in the clinical setting and appreciating how microaggressions can impact care providers, patients, hospital systems and ultimately health equity are critical to any institution hoping to dismantle structural racism.

Learning Objectives:
By the end of this workshop, participants will be able to…

- Define the various types of microaggressions.
- Recognize when they occur and the reasons they may occur.
- Understand the impact of microaggressions on those who receive them frequently.
- Interrupt microaggressions when they occur using communication techniques.
- Run a similar workshop at their home institutions.

Session Methods and Format:
15 min: Introductions and Mini-didactic on Microaggressions
10 min: Large group exercise: identifying microaggressions
15 min: Pair and Share (in new pairs): Discussion of cases- whether or not to interrupt and how to interrupt- in breakout rooms
15 min: Large group debrief of cases
5 min: Closing

We will open with introductions and a brief mini-didactic on microaggressions, including a tool that can be used to interrupt microaggressions. This introduction will be followed an exercise during which the participants will be presented with 6 statements (provided by third year students) and asked to determine whether or not they represent microaggressions and why/why not (discussion will occur via chat and audio). Participants will then be paired in breakout rooms to discuss one of four cases. Specifically, the participants will be asked to (a) identify the microaggression, (b) construct an empathic response to the person who is the recipient of a microaggression, (c) discuss whether or not to interrupt the microaggression, and (d) construct an approach to interrupting the microaggression or an alternative next step. Participants will then return to the main room for the final 20 minutes to participate in a large group debrief of the cases. Workshop closing will be brief and consist of the elicitation of take-home points.

Online Facilitation:
This will be an active learning session focused on empowering participants' experiential learning. The facilitators will make use of the following virtual tools during the workshop: material distribution via chat, screen sharing, audience response by audio and chat, and breakout rooms.

Experience:

- Mersema Abate, MD is a Co-Director of the MS3 year at the ZSOM inclusive of the health equity core learning week.
- Melissa Pawelczak, MD is the Assistant Dean for the Advanced Clinical Experience (MS3 year) at the ZSOM and co-director of the health equity core learning week.
- Ellen Pearlman, MD, FACH is the Associate Dean for Professionalism and Doctoring Skills at the ZSOM and serves as the faculty co-chair of the Curriculum Subcommittee of the ZSOM's Committee to Address Racism and Allyship (CARA). She also provides faculty development on communication skills and co-directs the Facilitator-in-Training program of the Academy of Communication in Healthcare.
- Robert Roswell, MD is the Associate Dean for Diversity, Equity, and Inclusion at the ZSOM, a co-director of the health equity core learning week, and the chair of the Executive Committee of the ZSOM's Committee to Address Racism and Allyship (CARA).

References:

N/A

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Breaking Down the Steps: Turning Teaching Activities into Educational Scholarship

Submission Type: Workshop
Accepted as: Workshop
Region: NEGEA

Authors:
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Grace Huang, Harvard Medical School
Douglas Gould, Oakland University William Beaumont School of Medicine

Abstract Body:
Rationale:
MedEdPORTAL, the MEDLINE-indexed Journal for Teaching and Learning Resources of the Association of American Medical Colleges, peer reviews and publishes educational and assessment resources. It represents a unique publication venue for health professions educators designing innovative teaching activities for medical and dental learners, while extending their impact by disseminating their works.

The NEGEA community is well positioned to contribute to the literature base in a way that benefits the entire community of health science educators. Additionally, helping members understand how to present their educational innovations as scholarship is critical to individuals' professional development. The process of submitting to MedEdPORTAL requires an Educational Summary Report (ESR), which is structured like a traditional research manuscript. However, preparing a manuscript in a way that allows replicability by future readers requires some details and nuance that is distinct from other medical education journals.

This workshop, led by the Editor-in-Chief and two associate editors of MedEdPORTAL, is designed to provide hands-on experience with preparing an ESR for submission. Participants will consider teaching resources of their own that are potentially submittable to MedEdPORTAL and will be guided through each section of the ESR.

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

- describe how your teaching activities could be transformed into educational scholarship
- apply principles of scholarly writing to translate a common teaching activity into a MedEdPORTAL submission
- develop a personal "to-do" list to prepare a MedEdPORTAL submission

Session Methods and Format:
15-minutes: Review Glassick's criteria for the scholarship and the Educational Summary Report (ESR) worksheet. Participants select a teaching activity they would consider submitting to MedEdPORTAL.

The first section is didactic, but we aim to provide a learning environment that will invite questions and interaction. The ESR worksheet is a list of prompting questions that provide guidance for preparing an ESR, by section. Participants will think about their own activities that may be eligible for submission to MedEdPORTAL. They will go through the questions on their own, fostering the application of principles introduced in the didactic to their own work.

30-minute: Small group activity in clusters by teaching activity (simulated/standardized patients, interactive workshops, team-based learning, games/other).

Faculty with similar types of teaching activities will be put together, which will foster sharing best practices and idea generation. Then each participant has a turn having the small group help them with a section with the ESR (participant #1 gets help on objectives, participant #2 gets help on the introduction, etc.).

15- minutes: Large group report-out and Wrap-up

The large group report-out will highlight strategies for each section of the ESR. Hearing other participants' experience will essentially provide "worked examples" for inspiration. A facilitator will also take notes that will generate effective principles for tackling parts of a manuscript. The workshop conclusion will allow synthesis and consideration of "muddy points" for future individual reflection.

Online Facilitation:
During the large group activity, one co-author will be the presenter/ moderator and one will be the chat moderator. They will take turns as they are discussing different parts of the presentation.

Small groups will be conducted using the breakout sessions. Two of the co-authors will be breakout facilitators and the third author will be broadcasting a message to all breakout rooms and will join various breakout rooms to listen in on conversations or answer questions. We will share a Google document with the participants that hold the ESR worksheet. We will monitor the Google document in real-time as participants work.

If there are any issues with Zoom, participants can continue working on the Google Doc. The authors will provide feedback to the participants via email.

Experience:

- Grace Huang, MD, is the editor-in-chief of MedEdPORTAL. Emine Abali, Ph.D., and Douglas Gould, Ph.D. are associate editors of MedEdPORTAL. They all have years of experience in editorial work; Dr. Gould was the previous editor-in-chief of Medical Science Educator. Dr. Abali has been the recipient of the national peer reviewer award twice.

References:
1. https://www.mededportal.org

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Difficult Conversations: The Discriminatory Patient

Submission Type: Workshop
Accepted as: Workshop
Region: NEGEA

Authors:
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Margaret Horlick, New York University School of Medicine
Richard Greene, New York University School of Medicine

Abstract Body:

Rationale:
Discriminatory remarks from patients directed at medical trainees are common. In one study by de Bourmont et al (JAMA Network Open, 2020), 98% of residents reported experiencing or witnessing biased behavior at least once in the past year. Many also reported that prioritization of clinical care and a lack of knowledge or skills for responding had kept them from taking action. Even though Title VII of the 1964 Civil Rights Act states that employees of health care institutions have the right to a workplace free from discrimination based on race, color, religion, sex, and national origin, health care workers have silently accepted discrimination as part of their job. Discriminatory remarks from patients negatively impact trainees' well-being, and have potential to impact the care a patient receives. We developed a workshop to train physicians in how to explicitly respond to witnessed episodes of patient discrimination toward their colleagues. We will share frameworks for responses, and participants will then practice with cases inspired by real events.

Learning Objectives:
The session will provide an opportunity for participants to engage in a discussion of their approach to interactions with discriminatory patients.

By the end of the session, participants will:

- Recognize that discrimination in any form is unacceptable, even from patients in clinical settings
- Appreciate the complex nature of interactions with a discriminatory patient – for patients, direct recipients and witnesses
- Practice an approach to interactions with discriminatory patients

Session Methods and Format:
The session will be structured and timed as follows:

Introduction (12 min)
3 min -- Welcome and Learning Objectives (Dr. Porter)
8 min -- Review of approaches from the literature (Dr. Porter)
2 min -- Introduction to case-based format and discussion (Dr. Torres)

Cases (45 min)
Each case will be discussed for a total of 15 minutes, with 10 minutes for small-group discussion in a breakout room, followed by 5 minutes of large-group debrief. Each breakout room will have one of the four authors serving as a facilitator. Dr. Torres will facilitate the large-group debrief.

Case 1: Gender-based discrimination
Case 2: Race-based discrimination
Case 3: Discrimination against LGBTQ+-identifying individuals

Conclusion (3 min)

Online Facilitation:
The workshop will utilize breakout rooms for each case to allow for intimate discussion of this challenging topic. This will also allow for more individuals to verbalize how they would respond to the prompt, and get personal feedback from their colleagues and facilitator. Those unable or unwilling to share their comments aloud will be encouraged to utilize the chat function of the online platform so that all participants commit to and practice a response.

Experience:-

- Dr. Porter is an Associate Program Director for the NYU Grossman School of Medicine Internal Medicine Residency and has developed and presented similar workshops for both housestaff and faculty.
- Dr. Torres is Director of Diversity Training and Housestaff Mentoring for the NYU GSOM Office of Diversity Affairs and has co-hosted these workshops with Dr. Porter.
- Dr. Horlick is Senior Associate Program Director for the NYU GSOM Internal Medicine Residency and oversees the program's "Resident as Teacher" curriculum, which includes similar workshops.
- Dr. Greene is Director of Health Disparities Education for the NYU GSOM Office of Diversity Affairs and an Associate Program Director for the Internal Medicine Residency, overseeing its anti-racism curriculum.

References:
1. de Bourmont SS, Burra A, Nouri SS, et al. Resident Physician Experiences With and Responses to Biased Patients. JAMA Netw Open. 2020;3(11):e2021769. doi:10.1001/jamanetworkopen.2020.21769

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Trauma Informed Medical Education: TIME to Act

Submission Type: Workshop
Accepted as: Workshop
Region: NEGEA

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Amy Weil, University of North Carolina at Chapel Hill School of Medicine
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Jennifer Potter, Harvard Medical School

Abstract Body:

Rationale:

Because trauma is ubiquitous across the life course and may be associated with a wide variety of adverse health consequences, medical schools are developing trauma-related educational content for their curricula including trauma-informed care (TIC). In addition to considering curricular content, there is growing consensus that medical educators also need to apply a trauma-informed lens to the context of medical education. Students may arrive to medical training having experienced adverse childhood events, bias, and discrimination, and they may experience additional discrimination and or mistreatment during their medical training impacting their ability to engage in education.

Trauma-informed medical education (TIME) aims to minimize the potential for retraumatization (of students who arrive with experiences of trauma), to minimize iatrogenic traumatization (of any student), and to improve educational equity by applying the six principles of TIC to the undergraduate medical education learning environment.1,2 This includes the domains of curricular development, curricular delivery, student advising, and institutional policies. This interactive session will demonstrate three applications of TIME to current challenges in medical education and invite participants to apply the TIME framework to challenges at their own institutions during small group break out sessions. The session will demonstrate how TIME is a broadly applicable framework to address current challenges in medical education.

Learning Objectives:

Upon completion of this session, participants will be able to:

1) Outline the 6 principles of trauma-informed care as described by the Substance Abuse and Mental Health Services Administration;
2) Describe how a trauma-informed lens can be applied to the context of undergraduate medical education to enhance the learning environment, learning outcomes, student health/well-being, and educational equity; and
3) Identify opportunities to advance trauma-informed medical education at their home institutions, using the TIME framework as a guide.

Session Methods and Format:

To address the pressing need for development of effective trauma-informed medical education (TIME) innovations, this session will begin with a brief didactic review of the need for TIME and present a TIME framework based on the six principles of TIC to be used throughout the session (7 minutes). This will be followed by three TED-style presentations featuring applications of TIME from three different institutions to current challenges in medical education: virtual learning, student performance issues, and

social justice curricula (7 minutes each). Each presentation will summarize the interventions according to the TIME framework.

These presentations will follow with a facilitated, small group activity (20 min) in which participants will brainstorm opportunities to apply trauma-informed principles to their own teaching and educational leadership. Using the TIME framework, small groups will walk through potential solutions to problems identified at their own institutions. Facilitators will all have a background in TIC and be trained in TIME. Participants will then join a large group, interactive wrap-up discussion in which groups will share key issues identified and potential TIME solutions (10 min). We aim to demonstrate how TIME is broadly applicable to a range of challenges in undergraduate medical education.

Online Facilitation:
For the first 4, 7 minute presentations, we will utilize screen share to project slides. Participants will periodically be asked to respond to prompt using the chat feature and the polling feature.

For the small group session, we will utilize the breakout room feature. Each small group will have no more than 5-10 participants. We will recruit additional facilitators as necessary, otherwise the authors will facilitate small groups. For the large group debrief, we will have participants rejoin the large group and share through several zoom polls, and having each group share one solution.

- Experience:
- Taylor Brown is a fourth-year medical student at Harvard Medical School and first author paper of a framework for trauma-informed medical education.
- Greeshma Somashekaris a fourth-year medical student at UNC School of Medicine with background in trauma-informed care and anti-racist advocacy work.
- Amy Weil MD is a Professor, Division of General Medicine and Clinical Epidemiology, and a Medical Co-Director for the Beacon Child and Family Program is a background in trauma-informed care.
- Nhi-Ha Trinh MD, MPH is the Director of the Massachusetts General Hospital Department of Psychiatry Center for Diversity and a student advisor at Harvard Medical School with a background in trauma-informed care.
- Jennifer Potter MD is a Professor of Medicine and Advisory Dean at Harvard Medical School with many years experience in trauma-informed care.

References:
1. Brown T, Berman S, McDaniel K, et al. Trauma-Informed Medical Education (TIME): Advancing Curricular Content and Educational Context. Acad Med. 2020;Publish Ahead of Print. doi:10.1097/ACM.0000000000003587
2. McClinton A, Laurencin CT. Just in TIME: Trauma-Informed Medical Education. J Racial Ethn Health Disparities. 2020;7(6):1046-1052. doi:10.1007/s40615-020-00881-w

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Initiating a discussion-based anti-racism curriculum for beginning medical students – a critical race theory and narrative medicine approach

Submission Type: Workshop
Accepted as: Workshop
Region: NEGEA

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Michael Devlin, Columbia University Vagelos College of Physicians and Surgeons
Nicole Furlonge, Columbia University Vagelos College of Physicians and Surgeons
Julie Glickstein, Columbia University Vagelos College of Physicians and Surgeons
Reneson Jean-Louis, Columbia University Vagelos College of Physicians and Surgeons
Usha Krisnan, Columbia University Vagelos College of Physicians and Surgeons
Prantik Saha, Columbia University Vagelos College of Physicians and Surgeons
Delphine Taylor, Columbia University Vagelos College of Physicians and Surgeons

Abstract Body:
Rationale:
Medical educators have long struggled to create frameworks to discuss systemic racism in small groups settings with diverse students. In the wake of the murder of George Floyd, among many outrageous incidents of this country's pervasive systemic racism, our academic community came face-to-face with the many ways in which our institution has embodied biased and discriminatory practices. Innovative faculty development and curricular content models have been urgently needed.(1) Inspired by student organizing, faculty allies such as ourselves felt called to examine and fundamentally alter our curriculum. In alliance with colleagues in social work and education, this workshop will model interdisciplinary collaboration leading to both faculty development tools and a Narrative Medicine (NM)-based anti-racism seminar.

Pre-assigned summer readings explored the history of racism in medicine, health disparities, and implicit bias. We initiated our conversations, first with faculty and then with students, with James Baldwin's "A Letter to My Nephew",(2) with themes of history, systemic racism, bias, privilege, and humanity. To facilitate conversation, we chose a NM framework that achieves narrative humility, multi-perspectivism, and radical listening.(3)

We initially surveyed faculty to identify areas in need of faculty development. Our pre-survey revealed beginner to intermediate confidence in the skills to teach about anti-Black racism, with 17 out of 22 respondents reporting low levels of preparedness to address anti-Black racism. Faculty reported a particular lack of confidence to address biological conversations about race and to navigate racial tension in small groups. Respondents overwhelmingly acknowledged the need and expressed the desire for further education and training.

To prepare faculty to lead these conversations about racism, we invited education experts in African-American literature, adult learning, and critical race theory (CRT) to lead three 90-minute trainings. Social work and education graduate students trained in CRT joined the faculty in preparing for and then facilitating anti-racism sessions with medical students.

Faculty survey reveals that 100% of faculty found the faculty development helpful, and have increased awareness, skills, and confidence to teach anti-racism in medicine to pre-clinical students. We will

formally survey faculty again in August 2021. Re students, of 56% of student survey responses, 90% were positive. Students frequently commented that the session was well-facilitated.

We seek to share these pedagogical methods with medical educators committed to anti-racist medical educational curricula and environment, cultures of humility, and ongoing self-reflection toward bias-free teaching.

Learning Objectives:
Workshop Goal:

- Faculty will be familiar with a variety of skills to facilitate discussions about racism in small group learning environments

Objectives:

- Learn and discuss skills to facilitate discussions about racism
- Explore faculty challenges to classroom discussions about racism
- Experience the use of narrative medicine to facilitate discussions of systemic racism through use of Baldwin's "A Letter to My Nephew."
- Consider interdisciplinary collaboration in teaching about racism

Session Methods and Format:
0 min: Participants will provide contact information, and list questions and challenges via googledocs. Presenters will use this information to guide the session and enable post-session follow-up.
10 minutes: Direct participants to 5-10 member breakout rooms for a facilitated NM exercise using an excerpt from Baldwin's essay. Facilitators will encourage participants to identify challenges and rewards of using this process to facilitate discussions about systemic racism.
5 min: Topic presentation, including faculty pre- and post-session and student post-session surveys
10 min: Summary of pedagogical strategies based in CRT and NM (Drs. Furlonge and Brookfield)

- We will distribute a "Teaching About Racism" handout with multiple practical tools for educators.

15 min: Participants return to breakout rooms with facilitators to apply learned strategies using a different excerpt of the Baldwin essay. Guiding questions for discussion include both content and process.
20 min: Participants and panelists will explore the viewpoints, ideas, challenges, and opportunities discussed during small group discussions using polleverywhere.com and backchannelchat.com and zoom chat.

Online Facilitation:
The described faculty development and curriculum were developed for remote learning; this session will employ the same tools including: zoom chat, polleverywhere.com, backchannelchat.com, breakout rooms, material distribution, Google Docs, and screen sharing.

Experience:

- J.Alves-Bradford is Office of Equity, Diversity and Inclusion in Psychiatry Director.
- S.Brookfield, expert in adult learning and critical race theory (CRT), is Professor of education.
- H.Cunningham is Equity and Justice in Curricular Affairs Director.
- M.Devlin is Associate Foundations of Clinical Medicine (FCM) Course Director.

- N. Furlonge, expert in African-American literature and faculty development, is Professor of education.
- J.Glickstein is an experienced FCM faculty member.
- U.S. Krishnan is an experienced FCM faculty member.
- P.Saha is an experienced FCM faculty member.
- D.Taylor is FCM Course Director.
- J.Reneson is a social work student and racial justice educator.

References:

1. Ross, P. T., Lypson, M. L., Byington, C. L., Sánchez, J. P., Wong, B. M., & Kumagai, A. K. (2020). Learning From the Past and Working in the Present to Create an Antiracist Future for Academic Medicine. Academic Medicine, 95(12), 1781-1786.
2. Baldwin, J. (1962). A letter to my nephew. The Progressive, 1, 19-20.
3. Charon, R. (2017). The principles and practice of narrative medicine. Oxford University Press.

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Achieving your goals through a learning network

Submission Type: Workshop
Accepted as: Workshop
Region: SGEA

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Mary Haas, University of Michigan Medical School
Louito Edje, University of Cincinnati Medical Center
Linda Love, University of Nebraska College of Medicine
Larry Hurtubise, Ohio State University College of Medicine

Abstract Body:

Rationale:
A learning network, also known as a personal learning network (PLN), is an informal network of people a learner or educator interacts with and derives knowledge from. The intentional development of learning networks can support faculty to achieve personal and professional goals. These types of connections can be made virtually, which is useful to faculty working remotely and needing support and guidance. With the COVID disruption educators have had a mixture of isolation and a variety of virtual connections. The goal of this workshop is to help participants explore learning networks, identify possible network connections, and apply tips for creating effective networks.

Learning Objectives:

1. Identify personal goals
2. Understand the foundation of learning networks- Connect, contribute, converse, request, share
3. Align goals and plan personal network
4. Discover and choose appropriate technology to support their network
5. Establish a network by mapping, identifying, and contributing to an educational and leadership learning network with like-minded professionals who will broaden their experience and challenge their thinking on an ongoing basis

Session Methods and Format:
This virtual session will provide learners and educators with tools and guides to help them establish goals, plan their network, apply technology tools, and map their connections to educational leaders. In addition, these tools may help faculty develop junior faculty and trainees. Methods used include mini lecture, demonstration, discussion, small group interaction, and hands on activities. The lesson plan includes the following:

Minutes	Topic
10	Welcome and introductions All participants will provide an introduction stating the following: ▪ Name ▪ Institutional affiliation ▪ Areas of expertise and area of growth ▪ (If group is large, participants will introduce in small groups)

5	Define learning networks and provide evidence of success Presenters will provide a quick overview of PLNs, experiences using them, and data providing evidence of effectiveness
20	Goal identification and alignment with personal network plan Presenters will guide participants in small groups to identify goals, identify existing and new connections to achieve the goals. Through this process participants will complete the following: • An electronic goals identification worksheet • A network planning tool to identify possible connections
15	Explore technology tools to enhance network connections Presenters will lead participants in a discussion to identify possible technology tools (Twitter, LinkedIn, research sites, etc.) and specific ways to use these tools to grow a network
10	Final questions/debriefing/summary of work completed

Online Facilitation:
One facilitator will serve as session monitor to coordinate technology, mute/unmute participants, assign breakout rooms, tee up technology for session (how to engage), etc.; one facilitator will monitor the chat feature to solicit questions/comments and distribute links to handouts; a facilitator will be in each breakout room with assigned tasks for participants; one facilitator will present using screen sharing features.

Experience:

- Sally Santen, MD, PhD, is Senior Associate Dean of Assessment, Evaluation, and Scholarship at Virginia Commonwealth University School of Medicine who has 15 years of connecting educators, trainees, and researchers.
- Jean Bailey, PhD, is an Associate Dean for Faculty Development and has over 18 years of experience focused on promoting faculty success and development.
- Mary Haas, MD, MHPE is an instructor, assistant residency program director and assistant director of clinical faculty development in the Department of Emergency Medicine at the University of Michigan Medical School. She has authored publications and spoken nationally on the related subjects of social media use in education and personal learning networks.
- Louito (Lou) Edje, MD, MHPE, FAAFP is the Designated Institutional Officer (DIO) for the University of Cincinnati with over 10 years of faculty development and residency training and serves as the GME Associate Dean.
- Linda Love, EdD is a health professions educator and organizational developer and is the Director of Faculty Development, an Interprofessional Academy of Educators Scholar, and Assistant Professor in the Department of Psychiatry at the University of Nebraska Medical Center.
- Larry Hurtubise, MA is the Director of the Office of Educational Innovation and Scholarship with over 15 years of encouraging collaborative networks and sponsoring colleagues.

References:
1. Haas, M RC, Haley, K, Nagappan, BS, Ankel, F, Swaminathan, A, and Santen, SA. "The Connected Educator: Personal Learning Networks." The Clinical Teacher. 17.4 (2020): 373-77. Web.

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Addressing racism within a coaching program to promote clinical skill development and self-regulated learning skills

Submission Type: Workshop
Accepted as: Workshop
Region: SGEA

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Marc Vetter, University of Virginia School of Medicine
Andrew Parsons, University of Virginia School of Medicine
Megan Bray, University of Virginia School of Medicine
Maryellen Gusic, University of Virginia School of Medicine

Abstract Body:
Rationale:
In recognition of current social and racial tensions impacting our communities, current clerkship students sought to augment their clinical skills training to ensure that they are prepared to engage in challenging patient encounters that include culturally sensitive topics. Advised by faculty with expertise in the development of, and use of standardized patients in teaching, cultural competency, and health disparities, equity and racial justice, students developed a curriculum to address these concerns. Student resources were created to help them prepare and "try out" new skills in a simulated setting. The learning activities are being incorporated into our longitudinal Foundations of Clinical Medicine course during which students meet individually with their Faculty Coach (FC) to create learning plans using data from clinical assessments. Resources were also created for the FCs to equip them to partner with students to use this experience as a foundation for creating action steps to apply learning in future clinical experiences.

Coaching is a strategy that is being widely used to guide students in evaluating their performance, identifying specific learning goals and creating a plan to achieve these goals. Applied in this way, coaching is an effective tool to assist students in developing self regulated learning skills needed for life long learning throughout their careers. As such, coaching conversations can help prepare learners to face challenges as they engage in patient care as members of health care team.

In this interactive session, participants will observe a standardized student during a standardized patient encounter that is part of a cultural humility curriculum designed to simulate challenging communication and engagement around race that students may experience in a clinical setting. Participants will practice coaching with the standardized student to help the student assess and articulate the learning needs illuminated by the encounter.

Learning Objectives:

- Illustrate a teaching strategy to enhance students' communication skills in challenging patient encounters related to race
- Define self-regulated learning (SRL) and how these skills impact a learner's ability to engage in life-long learning (LLL)
- Describe how coaching, distinct from advising/mentoring, can be effective in preparing learners to face challenging clinical situations
- Examine how a coaching approach can be used to promote students' ability to identify learning goals and to define an action plan to achieve those goals

Session Methods and Format:

1. Introduction: Elicit attendees' experience in addressing race and social justice in their medical student curricula using chat (what teaching strategies have they/are they using); Use polling to elicit participants' experience with coaching (one on one, coaching program, planning stage, implemented) (5 min)
2. Brief didactic: Review the principles of SRL, LLL and coaching. (5 min)
3. Large group: Participants observe a recording of a student-SP encounter during which the patient expresses a racist statement about another member of the healthcare team. (10 min)
4. Small group I: Participants will discuss their observations and strategize about how they would approach partnering with the student to facilitate the students' use of this experience to guide learning and to apply skills in future patient encounters (10 min)
5. Small group II: In small groups, one participant will role play a coaching conversation with one of the student facilitators. The goal of the conversation is to promote the student's SRL skills and use of tangible communication strategies they can employ in these types of uncertain and uncomfortable encounters. Other participants in the small group and the student facilitator will provide feedback to their colleague. (10 min)
6. Large group: Participants create a list of benefits and challenges related to addressing race issues in their curricula and in using coaching at their home institutions. (10 min)
7. Questions (5 min)
8. Reflections from the student facilitators about the curriculum/the conversations with their coaches related to this experience (5 min)

Online Facilitation:
This session will incorporate break out rooms for small group discussion and hands-on exercises with students and faculty facilitators part of each session. Large group sessions will use chat (one faculty member will monitor and another will focus on responding to questions as they arise, if appropriate). Polling will be used to prime discussion. Screen sharing will enable display of slides and the recording of the student-SP encounter to be viewed by the audience.

Experience:

- Ms. Walker, Ms. Whalen, and Mr. Vetter are students in the UVA class of 2022 who led the efforts to create and implement this curriculum. Drs. Bray and Gusic are on a leadership team that developed the coaching program. Dr. Parsons is a faculty coach and leads the pre-clerkship coaching program.

References:
N/A

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How to give an inclusive presentation: from content to delivery

Submission Type: Workshop
Accepted as: Workshop
Region: SGEA

Authors:
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Abstract Body:
Rationale:
The field of emergency medicine celebrates diversity and inclusion in education. However, most emergency physicians have no formal training on how to give an inclusive presentation. In this session, participants will learn tangible ways to deliver inclusive and equitable educational content for all types of learners. First, content must be accessible to all. This includes logistical aspects of content delivery such as placing captions on all videos for those who are hard of hearing, avoiding phrases such as "this, that, these" without verbally indicating what "this, that, these" are for those that cannot see what you are pointing to, ensuring that you are not alienating anybody with mobility difficulty when asking participants to move around a room for an activity and using an accessibility checking software.

It is also important to consider the actual content. Participants will learn to include non-stereotypical vignettes about individuals from diverse backgrounds in order to decrease potentially harmful bias. Similarly, display diversity within graphics and pictures. A picture of an individual in a wheelchair when discussing lacerations helps normalize mobility disabilities. Similarly, a picture of a rash in a brown-skinned African American patient gives providers the tools to recognize and treat skin diseases in greater diversity of patients. Lastly, it is necessary to ensure statistics, data, conclusions, and recommendations presented are inclusive of individuals from all backgrounds whenever possible.

Learning Objectives:

- Upon completion of the workshop, participants will be able to apply at least five techniques to make the content and delivery of their next lecture or presentation more inclusive.
- Upon completion of the workshop, participants will be able to identify at least five commonly used phrases or sayings in presentations that alienate individuals and are not inclusive.
- Upon completion of the workshop, participants will be able to utilize at least three different resources for finding diverse graphics and pictures.

Session Methods and Format:

The session will start out with a brief lecture to introduce the topics, this lecture will include videos and active examples. We will then give individuals a topic that they are familiar with to give a presentation on and ask them to work in small groups to come up with a 3 minute presentation incorporating the tools that we provided in the beginning of the lecture. We will then have then present their lecture and all the groups will provide feedback.

Online Facilitation:
There will be a PDF handout that will be distributed prior to the session so participants can actively engage rather than taking notes. There will be breakout sessions and designated individuals to lead these. There will also be a designated chat moderator will answer specific questions via the chat and write down more broad questions to bring up to the group later. The back-up plan is to have the participants work on their presentation while we are troubleshooting technology and then for us to reconvening either via the same online platform or zoom etc..

Experience:

- Dr. Cortlyn Brown has used her formal DEI training from Cornell and co-created and co-lead national workshops on DEI related topics at SAEM, AAEM, and other national conferences.

References:

NA

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How's Our Curriculum Doing, Really? Systematically Approaching Program Evaluation

Submission Type: Workshop
Accepted as: Workshop
Region: SGEA

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Jennifer Gibson, Tulane University School of Medicine
Lauren Germain, State University of New York Upstate Medical University

Abstract Body:
Rationale:
Evaluating the clinical education we're providing students is critically important. It's also challenging to do well. As workshop facilitators, we don't have all the answers, but we are eager to share what we've learned as we've tried to identify best practices. In particular, we've found that having a framework can help you identify new ways to measure the effectiveness of the curriculum and help you put your data in context. We've also found that it's equally important to consider how you organize and track the data you measure. This content is relevant to anyone who is responsible for measuring learning outcomes and other markers of success for a clinical education program. This session is designed to provide participants with a framework that they will apply to their own institution throughout this session and as they improve their own institution's processes going forward.

Learning Objectives:

1. Describe your own institution's approach to program evaluation in terms of process vs outcome measures and Kirkpatrick levels
2. Discuss opportunities for more robust evaluation of the effectiveness of clinical education at your own institution
3. Identify new methods for tracking program data to use in curriculum oversight and planning

Session Methods and Format:
The session will begin with a brief overview of the types of data used in evaluating clinical education programs and how these can be characterized through two different lenses: process vs outcome measures and Kirkpatrick levels (10 min). Using an online form, we will ask participants to select which measures they are currently using at their institution and to identify the most significant opportunity to improve their own program evaluation (10 min). Using breakout rooms, we will facilitate small group discussions of each participant's area for improvement and brainstorm ways to help each person implement changes (15 min). We will reconvene as a large group to discuss strategies for tracking data and allow for participants to comment about the strategies that they have found most helpful (15 min). We will close by discussing how to use program evaluation to support curriculum oversight and allow time for remaining questions (10 min).

Online Facilitation:
This workshop uses a variety of methods to promote interaction using many of the features found in platforms such as Zoom, WebEx, GoToMeeting and others, such as large group discussions, chat, and breakout room discussions. During the breakout session, the workshop leaders will each separately facilitate discussion. During the large group session, one of the leaders will be assigned to moderate the chat function. We will also use a structured worksheet (on google docs) to allow for individual

application of the content. In addition, a link to the speakers' article about program evaluation in Medical Education Online (which is open access) will be provided through the chat feature.

Experience:

- The speakers represent the Program Evaluation Special Interest Group of SGEA. They all come from different institutions and each is directly involved in program evaluation at their own institution.

References:

1. Ragsdale JW, Berry A, Gibson JW, Herber-Valdez CR, Germain LJ, Engle DL representing the Program Evaluation Special Interest Group of the Southern Group on Educational Affairs (SGEA) within the Association of American Medical Colleges (AAMC) Evaluating the effectiveness of undergraduate clinical education programs, Medical Education Online. 2020; 25:1.
2. Kirkpatrick DL, Kirkpatrick JD. Kirkpatrick's four levels of training evaluation. Alexandria, VA: ATD Press; 2016.
3. Durning SJ, Hemmer P, Pangaro LN. The structure of program evaluation: an approach for evaluating a course, clerkship, or components of a residency or fellowship training program. Teach Learn Med. 2007;19(3):308–318.
4. Liaison Committee on Medical Education. Standard 8: Curricular management, evaluation, and enhancement. Functions and Structure of a Medical School: Standards for Accreditation of Medical Education Programs Leading to the M.D. Degree. Available from: http://lcme.org/publications/

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Promoting first generation college graduate student success in medical school: utilizing an online toolkit of resources

Submission Type: Workshop
Accepted as: Workshop
Region: SGEA

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Lisa Coplit, Frank H. Netter MD School of Medicine at Quinnipiac University
Hyacinth Mason, Albany Medical College
Mytien Nguyen, Yale School of Medicine
Vicki Sapp, Geisinger Commonwealth School of Medicine
Toshiko Uchida, Northwestern University The Feinberg School of Medicine

Abstract Body:
Rationale:
Medical students who were the first in their families to graduate from college bring unique assets to medical institutions.1 They often possess a track record of highly desirable traits for a physician such as grit, resilience, self-determination, and innovative thinking as well as important insights into the complex health disparities facing the U.S. healthcare system today. However, first generation college graduates (FGCG), and others who come from backgrounds with limited exposure to medicine, may also have unique needs and face challenges that are not always publicly recognized by their schools.2 For example, cultural capital (what one knows about the culture they are in) and social capital (who one has as their guide)3 may be in short supply for FGCG students, leaving them encumbered by what researchers have shown to be invisible yet very real barriers that do not affect their continuing generation counterparts.4 Medical schools may also underestimate the financial constraints that some students face.5 Recently, the Association of American Medical Colleges (AAMC) introduced a First-Generation College Student Indicator to allow medical schools to more accurately identify FGCG applicants. In 2019, the Undergraduate Medical Education (UME) Section of the Group on Educational Affairs (GEA) convened a work group to develop an online toolkit of resources for medical schools and mentors to support and celebrate FGCG medical students/trainees. The purpose of this workshop will be to share resources from the recently published toolkit and to help participants develop strategies for supporting FGCG medical students at their own institutions.

Learning Objectives:

- Identify assets FGCG medical students bring to medicine
- Identify challenges FGCG medical students may face during medical school
- Utilize an online toolkit to identify resources for specific needs of FGCG medical students
- State program changes that can be implemented at their own institution to support FGCG medical students

Session Methods and Format:
5 minutes (screen sharing)

- Welcome (Buchanan)
- Define “first-generation” (Mason)

- Share data on experiences of first-generation college graduates in medical school (Casillas)

5 minutes (active engagement: whiteboard)

- Common virtual whiteboard to discuss assets FGCG bring to medical schools and the field of medicine (Moderator: Althotz)
- Common virtual whiteboard to highlight challenges faced by FGCG in medical school (Moderator: Nguyen)

5 minutes (screen sharing, material distribution)

- Introduce toolkit resources categorized into the following 6 areas of support (Uchida)
- Academic Support
- Learning Environment
- Professional Development/Career Mentoring
- Emotional Support
- Financial Support
- Family Resources

20 minutes (active engagement: breakout rooms, audio, chat, and material distribution)

- Facilitated breakout rooms (Buchanan, Casillas, Coplit, Mason, Sapp, Uchida)
- Attendees (utilizing audio and chat) work through a case study focused on one of the 6 areas and develop a plan to assist FGCG students in each scenario using toolkit resources
- Attendees (utilizing audio and chat) discuss utilization of the overall toolkit and resources, including needs assessments to support FGCG students in their own institutions

12 minutes (active engagement: audio and chat)

- Selected individuals from small groups will briefly highlight their case study in one of the 6 areas and verbally report their plans to large group, including recommended resources (facilitated by Coplit)

10 minutes (active engagement: audio and chat)

- Selected participants from the breakouts share plans for using the overall toolkit and resources at their own institutions (facilitated by Mason)

3 minutes (screen sharing, chat)

- Takeaways (Uchida)

Online Facilitation:
The session will be successful in a virtual platform through the use of screen sharing, facilitated breakout sessions with audio and chat, whiteboards, and material distribution.

Experience:

- April Buchanan is the SGEA representative to the UME section and has extensive experience in workshop facilitation and curriculum design.
- As the former National OSR Delegate for Medical Education, Jacob Altholz has given multiple posters, presentations, and showcases.
- Alejandra Casillas founded and is a faculty advisor for the First Generation Program at the David Geffen and on UCLA's First Generation Advisory Board.

- Lisa Coplit served as the chair of the UME section from 2018-2020 and has extensive experience in developing and facilitating regional and national workshops, as well as online teaching sessions and webinars.
- Hyacinth Mason serves as faculty mentor for the Albany Medical College Chapter of the First-Generation College Graduate and Low-Income Student Association.
- Mytien Nguyen is President of the National First-generation and Low-Income in Medicine Association.
- Vicki Sapp is responsible for the Professional Identity Formation Cultural Humility Curriculum and has extensive experience in workshop presentations and curriculum design.
- Toshiko Uchida organized the team that developed this toolkit and is very familiar with the resources and their potential uses.

References:

1. Haskins, J. "Finding Success as a First-Generation Medical Student." AAMC, 2 July 2019, www.aamc.org/news-insights/finding-success-first-generation-medical-student.
2. Mason, HRC; Winesman, J; Marcellon, R; Huamantla, M; Ruiz, C; and Ayala, EE. (2018). "First Generation Medical Student Wellness in the US: A Cross-sectional Snapshot." Journal of Best Practices in Health Professions Diversity: Research, Education and Policy. 11(2):96-106.
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Personalizing your Career Pathway in Medical Education

Submission Type: Workshop
Accepted as: Workshop
Region: SGEA

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Amy Smith, Lehigh Valley Health Network

Abstract Body:

Rationale:
Medical educators are often charged to perform an essential role in diversified areas, including serving as curriculum leaders, mentors, role models, preceptors, and evaluators for learners across the medical and health professions education continuum. Additionally, many are expected to perform and disseminate scholarship, recruit and advise learners, and chair and participate on committees and other service responsibilities. While many educators enthusiastically take on such roles and tasks, alignment of these tasks with one's career portfolio is often overlooked or not considered. With medical educators constantly being asked to take on more with less support and resources (as is the case in the current COVID-19 pandemic), this session aims to provide space for individuals to reflect on and consider ways to identify and advance essential skills that can contribute to their professional success.

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

1. Identify essential skills necessary to successfully meet the expectations of becoming/being a medical educator.
2. Create an individualized plan for professional development to enhance, establish, or refine the skills needed to excel as a medical educator using the SMART goal format.
3. Describe professional development opportunities for skills unique to the role of medical educator.

Session Methods and Format:
5 minutes – Introduce speakers and poll the audience about the roles they serve in as medical educators.
8 minutes – Present literature review of the roles and skills required for effective medical educators.
2 minutes – Poll audience to determine the following related to their roles:

- What they do the most
- What is considered most difficult to achieve
- Things they wish they had time for
- The ideal balance for their personal and professional growth

30 minutes – Use breakout rooms to facilitate small group discussions. Using a structured worksheet via Google docs:

- New medical educators will be asked to reflect on skills that are strongly performed and those skills they would like to strengthen. For those skills they would like to improve, participants will create SMART plans with the help of the breakout room facilitator and other participants.
- Established medical educators will be asked to reflect on the skills that helped them to be successful, the avenues for professional development they've sought out in the past and new ways forward (especially if they've identified any misalignment between their current roles and future goals). For areas where there is misalignment or interest in forging a new career path, participants will create SMART plans with the help of the small group and facilitator.

15 minutes – Debrief small group activity and provide feedback, aha moments and examples that may be useful to the broader group and conclude.

Online Facilitation:
Workshop presenters have extensive experience using virtual conferencing software (Zoom, Teams, Webex, etc.) and have the skill set to effectively utilize tools such as polling, chat, screen sharing, and breakout rooms to facilitate each portion of this workshop. Additionally, for the small group discussion and individual reflections, the team has extensive experience and will utilize Google docs to ensure participants walk away with an individualized professional development plan that they can use after the conference. Each presenter has a strong internet connection and all presenters will be familiar with all aspects of the workshop in the case that some presenters run into connection issues.

Experience:

- The speakers represent the Faculty Development in Medical Education Special Interest Group of the SGEA. They all come from different institutions and each is directly involved in leading and contributing to faculty development, mentoring, advising and programming to advance faculty as teachers, scholars and clinical educators locally, regionally and nationally.

References:

1. Harris D, Krause Kc, Parish DC, Smith MU. Academic Competencies for Medical Faculty. Fam Med. 2007 39(5):343-350.
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Uzoka F, Fedoruk, A, Osakwe, C et al. A multi-criteria framework for assessing scholarship based on Boyer's scholarship model. Information Knowledge Systems Management. 2013;12:25-51.
3. Cripps M. The Faculty Administrator. Inside Higher Ed. Vol May 12: Inside Higher Education; 2014.
4. Levinson W, Branch WT, Kroenke K. Clinician-Educators in Academic Medical Centers: A Two-Part Challenge. Annals of Internal Medicine. 1998;July 1.
5.Ward K. Faculty Service Roles and the Scholarship of Engagement. ERIC Digest. 2003;ED480469.

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Management Reasoning: Practical Strategies for Teaching Using the Example of a Struggling Learner

Submission Type: Workshop
Accepted as:
Region: SGEA

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Thilan Wijesekera, Yale School of Medicine
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Andre Olson, University of Minnesota Medical School
Robert Trowbridge, Maine Medical Center
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Larry Gruppen, University of Michigan Medical School
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Abstract Body:
Rationale:
The vast majority of clinical reasoning literature, both in the field of health professions education and clinical decision-making and error, has focused on diagnosis (i.e., diagnostic reasoning). Recently, Cook et al. highlighted the need for greater focus on management reasoning, defined as "the process of making decisions about patient management, including choices about treatment, follow-up visits, further testing, and allocation of limited resources." Parsons et al. subsequently described the management script and the management script template as a tool for teaching management reasoning to learners at all levels of training.

To effectively teach the concepts of management reasoning, we propose using the example of a struggling learner. It is common for learners to struggle with clinical reasoning. Whereas remediation of diagnostic reasoning has been described, little has been written on the learner who struggles with management reasoning, a more complex and nuanced process. Doing so requires identifying the processes and core concepts of management reasoning that will facilitate learners understanding and educators teaching this crucial ability. While diagnostic reasoning is primarily a task of classification, management reasoning is primarily a task of "prioritization, shared decision-making, and monitoring." When clinicians employ management reasoning, they move beyond the diagnostic reasoning steps of data collection, problem representation, and prioritizing a differential diagnosis to generating and selecting management options. Just as a clinician weighs information for or against a diagnosis (e.g., pertinent positives and pertinent negatives) when prioritizing a differential diagnosis, they must also consider the harms and benefits in performing each management option. This process requires shared decision-making and consideration of risk, high-value care, and uncertainty. In this workshop, we will apply key theories and empirical evidence from the clinical reasoning literature to the remediation of the learner struggling with management reasoning. We will convey the benefits of early education in management reasoning and provide novel strategies for teaching.

Learning Objectives:

- Describe the concept of management reasoning, including a comparison to diagnostic reasoning.

- Describe the benefits of teaching management reasoning to undergraduate medical learners.
- Apply the core concepts of management reasoning, namely management script activation and selection of management options, to a struggling medical learner.
- Practice novel strategies for teaching management reasoning to undergraduate medical learners.

Session Methods and Format:

- Introduction (15 minutes): The session will begin with an introduction to the concept of management reasoning, including a brief review of key literature and the potential benefits of teaching management reasoning to undergraduate medical learners.
- Large Group Exercise (10 minutes): As a warm-up exercise, presenters will show a short video of a learner struggling with management reasoning. Participants will then volunteer to identify a few areas where the learner is struggling and how they might potentially address them, with presenters facilitating the discussion of 3-5 comments.
- Breakout Room Small Group Discussion (15 minutes): Participants will break into small groups to brainstorm management reasoning teaching strategies. Small group members will discuss effective methods of teaching the core concepts of management reasoning. Presenters will provide a tip sheet on teaching management reasoning to reinforce and augment the small group discussions.
- Breakout Room Role Play (25 minutes): Small groups will each have the opportunity to engage in role play of learners struggling with management reasoning. Each breakout room will be provided two clinical vignettes (2-4 minutes each) with short descriptions of educator and learner roles for each scenario. Participants will take turns playing the educator or learner depending on their comfort. Other small group members will serve as observers or commentators. A framework will be provided for each role, but participants will have the opportunity to improvise as desired, utilizing the strategies discussed in the previous small group activity.
- Large Group Discussion (10 minutes): Presenters will facilitate a "report-out" of 1-2 key takeaways volunteered by a participant from each small group. Presenters will then provide a brief summary of topics discussed and answer audience member questions.
- Take Home Resources: tip sheets, videos, and exercises will be provided to all participants with a QR code link.

Online Facilitation:
Presenters will use screen sharing (.pptx file), Zoom whiteboard function, Zoom hand raising, chat (written responses) and audio (verbal responses). The small group exercise and role play will take place in randomly-assigned breakout rooms with participants working together on a shared google doc. When the small groups end, facilitators will then share the google doc with the group and have each small group verbally share their contributions.

Experience:

- All authors are medical educators, researchers in the field of clinical reasoning, and many direct courses relevant to this topic.

References:
1. Cook DA, Sherbino J, Durning SJ. Management reasoning: Beyond the diagnosis. JAMA 2018;319:2267-2268.
2. Cook DA, Durning SJ, Sherbino J, Gruppen LD. Management reasoning: Implications for health professions educators and a research agenda. Acad Med. 2019;94;1310-1316.
3. Norman G. Research in clinical reasoning: past history and current trends. Med Educ. 2005;39(4):418-427.

4. Guerrasio J, Aagaard EM. Methods and outcomes for the remediation of clinical reasoning. J Gen Intern Med. 2014 Dec 1;29(12):1607-14.
5. Parsons AS, Wijesekera TP, Rencic JJ. The Management Script: A Practical Tool for Teaching Management Reasoning. Acad Med. 2020 Aug 95;8:1179-1185.

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Instructional Peer Observation: How to engage in a learning goal-oriented model

Submission Type: Workshop
Accepted as: Workshop
Region: WGEA

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Diane Stafford, Stanford University School of Medicine
Kiranjit Brar, Stanford University School of Medicine
Adam Hain, Stanford University School of Medicine

Abstract Body:
Rationale:
Academic faculty infrequently receive educational performance feedback due to institutional, temporal, and interpersonal constraints. Instructional Peer Observation (IPO) provides practical and effective faculty coaching approaches, feedback tools, and evidence-based teaching strategies in educational settings within a supportive and growth-oriented environment.

In IPO programs, colleagues come together to form and foster a community of like-minded faculty who provide formative feedback from which to grow, learn, and strengthen teaching effectiveness. While cultivating a supportive and affirming environment, IPO coaching rubrics provide an objective tool for peers to offer feedback. The effect is feedback that is impartial, constructive, actionable, and well-received. IPO programs have the potential to improve faculty teaching, student learning, and ultimately patient care.

Learning Objectives:

1. Explain evidence supporting instructional peer observation's effectiveness in strengthening faculty teaching.
2. Describe Stanford School of Medicine's IPO model and resources.
3. Apply practical and effective coaching approaches, feedback tools, and evidence-based teaching strategies in lecture and bedside educational environments.
4. Use principles of rubric-based feedback to cultivate peer-coaching in the teaching environment.
5. Consider institutional strategies to launch IPO programs at your institution.

Session Methods and Format:

1. Large group presentation and discussion
2. Facilitated breakout sessions.
    - Min 0-2 Introduction
        - Overview, goals, and rules of virtual engagement
    - Min 3-7 IPO Evidence
        - Background & literature supporting efficacy/need for instructional peer observation
        - Description of Stanford's program including training process; supportive, non-judgmental feedback among peers;

- Min 8-14 The Stanford IPO Model
  - Discuss themes embedded within instructional peer observation:
    - Value of triangulation of feedback & limitations of 360 and self-assessment;
    - Barriers and vulnerabilities to peer observation;
    - Growth mindset and emphasis on community building;
    - Adapting to remote environments;
- Min 15-16 IPO rubrics
  - Discuss lecture and bedside IPO rubrics and their use in peer observation
  - Distribute and provide an overview of IPO rubrics for session;
- Min 17-27Practice bedside peer observation in breakout groups
  - Participants will be divided into five facilitated breakout rooms. Each facilitator will share a short recorded clinical bedside encounter. Participants will utilize the bedside IPO rubric to assess the encounter. Facilitator will guide participants to share/discuss their assessments and feedback using the rubric (overall and point by point), capturing their ideas in Padlet.
- Min 28-34 Practice bedside teaching feedback in the large group
  - Return to large group. One pre-designated participant from each breakout session (5 total participants) will be guided to practice delivering feedback in role-play to the educator from the recorded encounter.
- Min 35-45 Practice lecture peer observation in breakout groups
  - Practice providing peer observation feedback in a didactic lecture teaching environment using the lecture peer observation rubric. Same format as breakout session for clinical bedside teaching but cohorts will be newly assigned, promoting opportunities for new peer-peer interactions.
- Min 46-52 Practice lecture teaching feedback in the large
  - Return to large group. One pre-designated participant from each breakout session will role-play delivering feedback to the educator whose lecture we viewed.
- Min 53-60 Shared lessons and Teaching Pearls

Invite participants to share their experience and lessons learned from the workshops as part of the toolkit participants will take home. Reemphasize the key thematic elements of instructional peer observations, challenges encountered, and successes. Highlight the goals of the session and take-home points to conclude.

Online Facilitation:
Course presenters are experienced online educators. In this interactive session, participants will complete peer coaching rubrics sent in chat links. In facilitated breakout groups, participants will watch sample videos of an educator teaching, complete rubrics, discuss feedback points and strategies using a shared Padlet document, and report out during large groups. Participants will practice providing real-time feedback with the featured educator. Faculty will monitor Zoom chat and facilitate breakout sessions. We will provide ample opportunity for moderated discussion and idea exchange at session close.

Experience:

- Danit Ariel, MD MS: Assistant Clinical Professor of Medicine, Stanford University; Director of Student Guidance, expertise in coaching and teaching students and trainees.

- Al'ai Alvarez, MD: Assistant Clinical Professor in Emergency Medicine, assistant program director in the Stanford Emergency Medicine Residency Program, and co-chair of the largest diversity mentoring initiative in Emergency Medicine.
- Malathi Srinivasan, MD: Clinical Professor of Medicine, Stanford University; board member for the Stanford Clinical Teaching Seminar Series, over 20-years teaching medical students, residents, fellows and faculty.
- Diane Stafford, MD: Clinical Professor of Pediatrics, Stanford University; Associate Program Director for Pediatric Endocrinology Fellowship, over 20-years of experience in mentoring, bedside and small group teaching at the GME level.
- Kiranjit Brar, MS: Director of Evaluation and Instructional Development at Stanford SOM.
- Adam Hain, DET, MAEd.: Associate Director for Instructional Development at Stanford SOM; presented nationally and internationally; taught at graduate level on instructional design.

References:

1. Bell, A. E., Meyer, H. S., & Maggio, L. A. (2019). Getting Better Together: A Website Review of Peer Coaching Initiatives for Medical Educators. Teaching and Learning in Medicine, 0(0), 1–8. https://doi.org/10.1080/10401334.2019.1614448
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4. Newman, L. R., Roberts, D. H., & Frankl, S. E. (2018). Twelve tips for providing feedback to peers about their teaching. Medical Teacher, 0(0), 1–6. https://doi.org/10.1080/0142159X.2018.1521953
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Cognitive bias: Naming, Reframing, and Checking in on the Elephant in Learner Assessment

Submission Type: Workshop
Accepted as: Workshop
Region: WGEA

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Abstract Body:
Rationale:
Cognitive bias permeates learner assessment in medical education. Bias in assessment has the potential not only to invalidate the assessment, but also to erode respect, value, and inclusivity in the learning environment. For example, the well known assessment bias of "in group" favoritism compounded by a lack of representative educator diversity can cause underrepresented learners to feel disconnected or even unsafe in the learning environment. Decades of data show that there is little educators can do to eliminate bias in their assessments. We offer an evidence-based, three-step solution to understand and move forward with cognitive bias in assessment: (1) Name: a simple admission about the presence of inherent bias in assessment (2) Reframe: a rephrasing of assessment language to shed light on the assessor's subjectivity, and (3) Check-in: a chance to ensure learner understanding and open lines of bidirectional communication. This process is theory-informed and based on decades of educational, sociologic and psychologic literature; we offer it as a logical first step towards a much-needed paradigm shift around addressing bias in learner assessment.

Learning Objectives:

1. Name and describe 5 common types of bias in assessment
2. Employ a framework to use during assessments to acknowledge and mitigate negative bias effects
3. Explore how to specifically modify your learning environment to decrease negative effects of assessment bias

Session Methods and Format:
Introduction/icebreaker (min 0-5, all), video illustration of assessment bias effects (5-10 Addie), introduction to main types of assessment bias with audience polling activity (10-15 Lainie), Reflective writing prompt followed by small group discussion in breakout rooms (15-22 all), "Name-Reframe-Check in" framework introduction (22-30 Tyra), Practice framework on learner cases in breakout rooms (30-42 all), Large group brainstorming discussion about how to apply these tips to specific and variable learning environments (42-50), Close, time for Qs (50-60).

Online Facilitation:
We plan to make this workshop especially interactive given the online requirement. We will employ the polling function, breakout rooms, chat board, and use attention grabbers (videos, personal narrative prompting) parsed through the workshop. Our topic naturally invites an element of personal reflection and, given its nature, we anticipate a variety of responses and questions from the group that will lead to a dynamic and provocative group discussion.

Experience:

- Tyra Fainstad: Associate Professor of Internal Medicine and Certified Professional Life Coach for physicians with experience in feedback delivery and reception and growing niche around bias in medical education assessments.
- Addie McClintock: Assistant Professor of Internal Medicine and Director of the Women's Health Training Pathway at the University of Washington with a strong background in medical education and specifically cultivating a psychologically safe learning environment.
- Lainie Yarris: Professor of Emergency Medicine and Vice Chair of Faculty Development at Oregon Health & Science University, and Deputy Editor at Journal for Graduate Medical Education, with significant experience in publishing and teaching about medical education feedback.

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Promote equity, diversity and inclusion in medical education through faculty development on inclusive teaching methods.

Submission Type: Workshop
Accepted as: Workshop
Region: WGEA

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Abstract Body:
Rationale:
What does equity, diversity and inclusion look like in the learning environment? How can faculty ensure that their teaching reflects the kind of inclusion and equity that are part of an institution's mission? While many programs addressing issues of equity, diversity and inclusion exist, few address the role that teaching plays in the equation. Unfortunately, there are many teaching practice and policies that are commonly used in both classroom and clinical learning environments that can disenfranchise some students (Periyakoil et al., 2020; Plews-Ogan et al., 2020; Woodruff et al., 2020). Often forms of harmful bias are part of institutionalized methods of teaching and assessment in medical education (Humphrey et al., 2020). Faculty development in this area is much needed and often neglected. This workshop will explore how to create faculty development that emphasizes inclusive teaching practices (Inclusive Teaching Guide, 2017).

Learning Objectives:
During this session, participants will have the opportunity to:

- Define inclusive teaching
- Identify inclusive teaching methods
- Explore techniques for faculty to engage in inclusive teaching practices
- Develop a plan for a faculty development session or series on inclusive teaching
- Assess teaching practices and policies for potential issues that detract from an inclusive learning environment

Session Methods and Format:
The session will include the following:

- Introduction. 5 minutes. Defining terminology and introducing topic and facilitator. Participants will be asked to rename themselves to identify their preferred pronouns. They will also be asked to add their location on an interactive map. The link to the map will be made available in the chat.
- Ice breaker. 10 minutes. To begin the session and create a sense of energy and fun, the ice breaker will include a polling game related to specific teaching practices and policies to gauge participants views on whether the particular method or policy contributes or detracts from an inclusive learning environment. The game will incorporate many teaching practices and policies which are common practice but can unintentionally disenfranchise some learners.
- Reflection. 5 minutes. Using an online version of a "think-pair-share" activity, participants will be asked to reflect and respond to prompt questions by raising a hand and using audio or by commenting in the chat box.
- Mini lecture. 20 minutes. Using PowerPoint slides, the facilitator will share strategies for and examples from an inclusive teaching faculty development session. Methods for teaching the session will be introduced including ways to mitigate faculty anxiety or fatigue. Multiple resources (case studies, question prompts, activities, etc.) will be discussed and made available to participants.

- Planning activity. 15 minutes. Using break-out groups, participants will work on a preliminary plan to create an inclusive teaching faculty development session or series in a shared document. Given the limited amount of time in a 60-minute session, an outline will be provided to give participants a head start on their plan. Teams will share their plans with the entire group.
- Closing comments and Q&A. 5 minutes. The facilitator will conclude the session with final comments and take questions.

Online Facilitation:
Several strategies will be used to ensure engagement and participation in the virtual environment.

- Participants will be encouraged to turn on cameras and use the "raise hand" feature if they wish to make a comment using audio.
- While questions will be held to the end to ensure a smooth-running session, chat will be enabled and participants can discuss issues, share resources, and ask questions in the chat at any time. The facilitator will provide an assistant who will monitor the chat box and bring important items to the attention of the facilitator.
- Breakout rooms will be employed for a hands-on planning activity. Spokespersons from each group will be asked to share their insights and present their work.
- The facilitator will screen share PowerPoints and navigate to other websites and resources during the session.
- Kahoot will be used for the ice-breaker activity.
- Google Docs will be used for the planning activity and the document will be screen shared as each team presents their plan.
- All materials and resources will be available in a shared Google folder. A link to the folder will be provided before, during, and at the closing of the session in the chat box.

Experience:

- Rosemary Tyrrell, EdD, is the Director of Faculty Development for the University of California Riverside School of Medicine, has over three decades of experience in faculty development and teaching practices, and has facilitated countless workshops on the topic of inclusive teaching.

References:
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Designing Web-based EdTech Materials : Building a production team and a budget

Submission Type: Workshop
Accepted as: Workshop
Region: WGEA

Authors:
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Abstract Body:
Rationale:
The core services of Educational Technology teams must evolve to meet the changing needs of the clients they serve. For some, this evolution has shifted a core mission focused on classroom technology innovation and support into a diverse services portfolio that includes media production and online course development. As these activities transition from exploratory projects into sustained operations, teams must manage staff workloads to maintain production capacity while also providing clients with reasonably accurate cost estimates for projects.

Stanford Medicine's Educational Technology team has, over the past decade, introduced capacity for producing custom illustration & animation media for online courses and increased our capacity for instructional and creative design. With this new capacity came the need to apply consistent rationale to our intake of projects, better predict the effort needed to complete projects, and more accurately estimate the costs of projects based on project size and design. The strategies we'll discuss in this workshop represent a response relevant to our environment and clients. We hope through the discussion we'll be able to share ideas and help participants identify barriers or opportunities for their own teams.

Learning Objectives:
By the end of this workshop participants will be able to:

- Build a project intake form to collect relevant data for initial evaluation.
- Identify objectives for an initial consultation with potential project requestors.
- Construct a hierarchy model to categorize project requests.
- Correlate common production tasks with the appropriate team member skill sets.
- Evaluate a project request for appropriate staffing options based on team capacity (internal staffing, contingent staffing or outsourced).
- Define which production task categories their team should adopt as a service.
- Evaluate proposed work orders for projected cost based on skills and time required to build materials.
- Compile a task workload data set and use it as a cost modeling tool.

Session Methods and Format:
12 minutes: Introductions & presentation of a sample scenario

- Overview of session learning objectives and walkthrough of a mock project request. We will demonstrate our intake processes from proposal to project planning. This will include the online form for project requests and justification for implementing it as an essential first step to collaboration with our team. We will also describe key questions covered during a consult and our prioritization rubric.

10 minutes: Breakout Discussion 1: Mock Consult

- Breakout topic: Each room is given the data from a project request and must generate a list of questions they feel would be effective for a consult to help prioritize the project.

12 minutes: Team Production Capacity

- A description of how Stanford Medicine EdTech determined which types of tasks should be satisfied with internal staff vs external vendors. Also, how we identified the types of tasks that could be reliably tracked across multiple course production projects and how that tracking has been executed. A quick look at the tool we use to track project tasks and progress, F-track to demonstrate the breakdown of task assignments and the essential data produced during a project lifecycle that is used to iterate and refine our cost models for future projects.

10 minutes: Breakout Discussion 2: Anatomy of a Project Plan

- Breakout topic: You have a general description of the project needs and now you need to identify the essential tasks in order to assign staffing. What are the types of production tasks your team currently provides or would seek to provide as a regular service? What tasks would you avoid or reserve for specific projects?

10 minutes: Cost Modeling

- A description of how Stanford Medicine EdTech performs production task workload tracking and uses that data to build a cost modeling tool. Demonstration of the cost modeling tool and examples of situations where that tool has been used as part of consultations with faculty and as part of our project evaluation process.

6 minutes: Brief summary of lessons learned followed by answering key questions from the session's chat.

Online Facilitation:
We will present audio, video, and screen sharing via Zoom. We plan to have small group discussions via Zoom breakout rooms, PollEverywhere interactions and use Mural for small-group collaboration. Polling questions at key intervals will to help identify shared concerns or similarities between participant teams.

One author will lead the workshop presentation in Zoom. Our other author will moderate the chat, elevate questions and comments as needed, and facilite breakout rooms.

Experience:

- Deila Bumgardner has been a project manager and production specialist as well as instructional designer across multiple online course development projects for CME and GME.
- Michael McAuliffe has been extensive experience projecting and managing project workflows, budget tracking and deliverable management.

References:
N/A

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Integrating Race and Language in Medical Education to Improve Health Equity

Submission Type: Workshop
Accepted as: Workshop
Region: WGEA

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Glenn Martinez, The Ohio State University
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Tiffany Shin, Wake Forest School of Medicine of Wake Forest Baptist Medical Center
Marco Alemán, University of North Carolina at Chapel Hill School of Medicine

Abstract Body:

Rationale:

Strategies to teach patient-centered communication skills with ethnic, racial, and linguistic minorities, such as unconscious bias training and medical Spanish courses, increase demand in medical education. Linguistic minorities, individuals who speak a minority language and have difficulty communicating in English, are particularly vulnerable to structural barriers in accessing quality healthcare due to their race and language's unique intersection. Raciolinguistics is an emerging area that focuses on the co-naturalization of language and race and provides unique perspectives on the lives of minority language speakers and people of color (Alim, 2016). In the US, Spanish is the predominant non-English language, spoken by 64% of individuals with limited English proficiency (American Community Survey, 2015).

Communication skills with linguistic minorities should include language skills (e.g., terminology) and an appreciation of the rich, heterogeneous linguistic and cultural practices within communities. The raciolinguistic perspective opens up new ways of understanding ethnic identity relevant to the provision of language-concordant care in Hispanic/Latinx communities (Rosa, 2019). This can be applied to other linguistic minority groups, e.g., Tagalog is the second most common non-English language spoken in California, Russian in Oregon, and Navajo in Arizona (American Community Survey, 2015).

Examples of questions raised by the intersectionality of language and race include: Why do patients feel singled out for speaking Spanish in a hospital waiting room? (Connors, 2019) Why do second-generation Hispanic/Latinx patients report greater discrimination in clinical settings than their first-generation counterparts? (Pérez et al., 2009) While crucial to providing quality care to language minority speakers and people of color, these questions are rarely addressed in the teaching of clinician's communication skills. On the contrary, curricular materials that focus on linguistic minorities such as medical Spanish courses may unintentionally reinforce raciolinguistic hierarchies and stereotypes by predisposing learners to view Spanish speakers through the lens of the myriad "social problems" such as alcoholism, teen pregnancy, poverty, and incarceration (Martínez, 2020).

This workshop will introduce participants to key concepts in raciolinguistics, discuss the intersection of language and race in clinician's communication skills, and apply race and language concepts to medical education teaching materials.

Learning Objectives:

1. To understand the intersection between language and race (the raciolinguistic perspective)
2. To apply the raciolinguistic perspective to the teaching of clinician's communication skills with linguistic minority patients
3. To evaluate medical education curricular materials to identify and address raciolinguistic hierarchies

Session Methods and Format:

1. Introducing raciolinguistics and its relevance to health (10 minutes). Presenter will start with a poll question to engage the virtual audience and break the ice.
2. Language and race in medical school communication skills training (10 minutes).
    a. Presenter will discuss the application of raciolinguistics to existing medical education curricular programs, such as medical Spanish courses and unconscious bias training.
3. Creating listening subjects through curricular materials (20 minutes). In breakout rooms (5-10 people/room), presenters will role-play a case scenario (5 minutes) that may be used in a clinical skills course followed by discussion (15 minutes). Presenters will guide attendees in critically examining the scenario concerning raciolinguistic concepts and proposing ways to improve the case.
4. Undoing raciolinguistic hierarchies in medical education (20 minutes). Presenter will share additional curricular materials (e.g., standardized patient scripts, sample dialogues), and solicit feedback. Poll or chat will ask participants about techniques they might use to reduce raciolinguistic hierarchies in the future—five minutes for final Q&A.

Online Facilitation:
We will utilize the following tools for online facilitation: Audio, Breakout Rooms, Chat, Material Distribution, Polling, Screen Sharing. One Presenter will be in charge of chat moderation to ensure any chat questions/comments are appropriately addressed. In case of technological challenges with polling, we will ask the interactive questions and ask participants to insert responses in the chat.

Experience:

- Alejandra Zapién-Hidalgo, MD, MPH, is Assistant Professor and Director of the Clinical Bilingual Medical Spanish Distinction Track.
- Glenn Martínez, Ph.D., MPH, is a Professor of Hispanic linguistics whose research focuses on the sociolinguistics of Spanish-speaking communities in the US and along the US-Mexico border.
- Pilar Ortega, MD, is Assistant Professor and Founder of the two non-profit organizations to advance Hispanic/Latinx health: the Medical Organization for Latino Advancement and the National Association of Medical Spanish.
- Tiffany M. Shin, MD, is Assistant Professor and Director of the MAESTRO (Medical Applied Education in Spanish through Training, Resources, and Overlearning) Program.
- Marco A. Alemán, MD, is Professor and Director of the Comprehensive Advanced Medical Program of Spanish (CAMPOS).

References:

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A special thanks to all the regional steering committee and sub-committee members who assisted in putting together the program and pre-conference sessions.

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