AAMC

Tomorrow's Doctors, Tomorrow's Cures®

2020 CGEA Regional Meeting

Abstract Compendium

Contents

Message from CGEA Chair

This has been a year like no other. The COVID-19 pandemic has changed the world profoundly and forced us to re-imagine medical education in a virtual environment. The murders of George Floyd, Ahmaud Arbery, Breonna Taylor, and others have brought to the forefront the systemic racism that exists in medicine and has compelled academic medicine to become much more actively anti-racist. It has served as a catalyst in moving forward the mission we all share to dismantle systemic racism and to promote equity in our own disciplines and institutions.

Many of us in the CGEA have been working harder than ever before, immersed in our own institutional issues and striving to provide an outstanding education to our learners. We live in states and cities with travel restrictions and mandatory quarantines, further isolating us and making it impossible to even consider the in-person gatherings and collaborations that we have taken for granted in the past.

In times like this it is vital to remember and celebrate those things that are valuable to us. We must work to preserve our CGEA community in the coming year, as in-person meetings will be impossible, and at a time when our local issues are so compelling and at times overwhelming. We are fortunate that the AAMC is compiling this compendium, to remind us that medical education is a key part of our careers and lives.

This compendium provides the regional GEAs with the opportunity to disseminate information that would have been presented at our spring meeting. It also provides us with the chance to acknowledge all of those who worked so hard to put together what would have been a fabulous meeting. Please take some time to read and digest the outstanding work of your colleagues. We are so lucky in the CGEA to have a talented and dedicated membership, and a genuine community of educators willing to share their ideas and collaborate with one another.

The executive and planning committees are striving to develop an innovative plan for our virtual spring 2021 meeting- one that will allow us to experience that sense of community that is the essence of the CGEA and will provide an opportunity for our members to present their work virtually. Please feel free to contact me if you have ideas about how to best accomplish these goals. In the meanwhile, enjoy this compendium that has been so thoughtfully assembled by our colleagues at the AAMC.

Please do your best to stay safe. I look forward to seeing you in person in what I hope is the not too distant future. Take care.

Beth
Elizabeth Baker MD, MHPE
Chair, Central Group on Educational Affairs
Senior Associate Dean of Undergraduate Medical Education, Rush Medical College, Chicago, IL

Message from CGEA Conference/ Host Chairs

The unpredictability of life definitely showed up in full-force with the cancellation of our meeting, one which the entire program committee (and our CGEA family) was looking forward to for so many reasons! Beyond the connections and our camaraderie, this year was an anniversary year and we had a historic location with a meeting agenda that was quite different from years prior. Needless to say, our hearts were broken that this meeting was not to be, but the knowledge that our CGEA family is safe and well and remains this way was more important than the meeting itself. With every gray cloud there is always a silver lining. With the pandemic we are now embracing novel pedagogy and ways to educate that we may never have considered before, all this becoming fodder for research and presentation in future meetings. We look forward to the next time we can meet face to face, but till then, stay safe and keep promoting the CGEA!

Special Thanks and Acknowledgments

I would like to thank the entire planning committee for their extraordinary work in planning what would have been a spectacular meeting. In particular our planning chair, Kamran Mirza, deserves a special mention. He brought such incredible energy and positivity to each task he tackled. He motivated the entire group, and certainly help to boost my energy on several occasions. Our local host, Mark Beard, as well as the entire University of South Dakota team, deserve a special shout out for their flexibility and enthusiasm, as well as the creativity they brought to the table. They certainly epitomize my notion of Midwestern hospitality. Finally, our MESRE lead, Heeyoung Han needs to be acknowledged for the intellectual rigor and high standards she brought, and continues to bring, to every task on her very full MESRE plate. Thank you, everyone!!

CGEA Awards

- o The CGEA regional Brownie Anderson New Educator Award
  - **Kamran Mirza MD, PhD -** Kamran Mirza MD, PhD, is Assistant Professor in Pathology and Laboratory Medicine and Medical Education at Loyola University Stritch School of Medicine, known around Loyola as the "Michael Phelps of medical education"! We had an amazing array of highly qualified nominees for the premier of this new award, but Kamran clearly stood out from the rest. He is a dynamo- I predict big things from Kamran in the future.

- o Student Travel Awards
  - **Robert Nolan** - "Interprofessional Education in Medical School: Is it effective in changing physician knowledge and attitude?" - University of Chicago Division of the Biological Sciences, The Pritzker School of Medicine
  - **Olivia Davies** – "Common Language and Share Experience: the MCW Common Read Program"- Medical College of Wisconsin, Milwaukee.
  - **Joseph Geraghty** – "One Test to Rule Them All: USMLE Step 1's Influence On Medical Student Decision Making and Emotion Work Regarding Step 2 CK" - University of Illinois at Chicago

- o Student Certificate of Honor *(in lieu of travel award)*
  - **Victoria Biach** - "Creating a More Diverse and Competitive Applicant Pool with Targeted Supplemental Advising" - University of South Dakota, Sanford School of Medicine

- o Post-Graduate (Resident/Fellow) Travel Award
  - **Jacob Mack -** "A novel video intervention to improve senior medical students' performance on outpatient telephone encounters" - University of Michigan Medical School

- o New Investigator Award
  - **Anitha Menon** – "Allies, Not Witnesses: A Case-Based Training Approach to Promote Medical Student Intervention in Sexual Harassment" - University of Michigan

- o CGEA Collaborative Grant Recipient
  - **Tracey A.H. Taylor, Ph.D., James Grogan, Ph.D., Robert Noiva, Ph.D., Robin Rivest, M.Ed., M.B.A., David Thomas, Ph.D.** – "Evaluation of the Use of Artificial Intelligence to Map Medical Education Assessment Alignment" - Oakland University William Beaumont School of Medicine

- o The New Laureates
  On the most auspicious occasion of the GEA's 50th anniversary, and with two such outstanding candidates nominated, we felt it was fitting to double our fun and give out two awards!
  - **Larry Hurtubise, MA –** Larry has had a long-time commitment to the CGEA with a long list extraordinary level of contributions to the evolution/development/growth of the CGEA through both formal and informal roles. Larry epitomizes the attributes we seek in a CGEA Laureate

and colleague. As quoted from his nomination letter: We dare you – find a CGEA meeting where Larry hasn't been "a presence": as a presenter, moderator, and/or convener.

- **Brenda Roman MD –** As Associate Dean for Medical Education at Wright State University Boonshoft School of Medicine, Brenda provides the highest caliber of mentoring and coaching to junior faculty and staff leaders, striving daily to help them achieve their goals within the realm of medical education.

Innovation Abstracts

A Fourth Year Patient Discharge Curriculum

Submission Type: Innovations Abstract
Accepted as: Poster

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Ananya Gangopadhyaya, University of Illinois College of Medicine
Yoon Soo Park, University of Illinois College of Medicine
Ana Clara Mauro, University of Illinois College of Medicine
Susan Doh, University of Illinois College of Medicine

Abstract Body:

Objective or purpose of innovation:

We wished to determine whether a fourth-year discharge curriculum improves students' skills, attitudes, and knowledge regarding safe discharge practices.

Background and/or theoretical framework and importance to the field:

Discharging a patient is an integral part of an intern's responsibility. Despite this, studies show that over 95% of students desire additional training regarding patient discharge[1].

Design: Instructional methods and materials used:

As a part of subinternship in medicine, students were immersed in a curriculum consisting of:

- Self-Study: didactics on safe discharge[2]
- Experiential:
  - Students provide discharge instructions to patients with direct preceptor feedback[2]
  - Students make post discharge phone calls to patients and do a self-assessment of areas for improvement
- Small group sessions addressing issues related to phone calls, ways to prevent errors and improve the safety of discharge process.

Outcomes:

Outcomes: Data was collected from 92 pre and 58 post-curriculum surveys. Differences in proportions were determined using chi-squared test. The results were:

Knowledge of:

- performing medication reconciliation increased from 40 to 75%, p < .001
- writing discharge summaries increased from 57 to 83%, p = .002

Attitudes regarding importance of:

- Transportation needs improved from 64 to 96%, p < .001
- Financial concerns improved from 53 to 90%, p < .001

Skills:

- Direct involvement of students in providing patient discharge education increased from 38 to 85%, p < .001.

Feasibility and transferability for adoption:
While portions of this curriculum was described as a workshop in clerkship, we implemented it in sub-internship to help students develop entrustable professional behavior. The direct preceptor and patient feedback regarding the discharge process followed by a debrief session makes this curriculum stand apart. A major limitation is implementation in a single site in medicine sub-internship.

References:
1. Block, L., M. Morgan-Gouveia, W. Kelly, M. Kannarkat, K. C. Chretien and D. Cayea (2015). "Participation of Medical Students in Discharge Tasks: A Needs Assessment." J Am Geriatr Soc 63(10): 2181-2183.
2. Maureen D. Lyons, MD*, D. Bailey Miles, MD, Andrew M. Davis, MD, MPH, Mark B. Saathoff, AmberT. Pincavage, MD "Preventing Breakdowns in Communication: Teaching Patient-Centered Posthospital Care Transitions to Medical Students" MedEdPORTAL. 2016 Aug 5;12:10435.

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A peer-led model for falls prevention for community-dwelling seniors, developed by medical and art therapy students

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Abstract Body:

Objective or purpose of innovation:
1. Demonstrate how a peer-led model in a falls prevention education program could be designed to be more effective in falls prevention.
2. Exhibit how tailoring and personalizing information can foster seniors' perception of personal relevance of falls prevention.

Background and/or theoretical framework and importance to the field:
Studies show that seniors are generally not interested or motivated to receive falls prevention information as they often underestimated their risk of falling, or tended to seek information only after experiencing falls. Other studies show seniors have low levels of knowledge about falls and falls prevention. Therefore, providing education that raises knowledge and motivation is an important initial step to facilitate subsequent engagement in falls prevention strategies. Key stakeholders' perspectives and theoretical frameworks were incorporated in the design of this novel falls prevention education program for community-dwelling seniors, using a peer-led approach.

Design: Instructional methods and materials used:
The program was developed and implemented by medical and art therapy student educators. Using relevant adult learning principles and health behavior change theoretical framework a presentation and resources for the peer educators was created. A follow-up one-hour session was held to check-in to determine if the peer-led approach on falls prevention presentation by community-based seniors was being delivered by newly trained peer educators.

Outcomes:
This pilot research has demonstrated that an evidence-based peer-led model informed by sound theoretical frameworks can be a feasible initial step towards addressing community-based seniors' perceptions regarding falls prevention. The primary mechanism was tailoring and personalizing the information delivered to foster the seniors' perception of personal relevance of falls prevention.

Feasibility and transferability for adoption:
Three medical students worked with four art therapy students to design the falls prevention reminder cards that are crucial to the program.

References:

Khong, L., A., Berlach, M., Hill, K., and Hill, A., 2018, "Community Peer-Led Falls Prevention Presentations: What Do Experts Suggest?" Journal of Primary Prevention 39 (2): 81-98.

Khong L., A., 2016 "The Impact of Peer Led Falls Prevention on Community Dwelling Older Adults: A Mixed Methods Evaluation", Theses University of Norte Dame, Australia

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Allies, Not Witnesses: A Case-Based Training Approach to Promote Medical Student Intervention in Sexual Harassment

Authors:
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Abstract Body:

Objective or purpose of innovation:
To evaluate the impact of evidence-driven and case-based bystander training on medical student awareness of sexual harassment (SH) in clinical settings and knowledge of effective intervention methods.

Background and/or theoretical framework and importance to the field:
Medical students are 220% more likely to experience SH than their peers in other STEM fields[1]. Social science literature suggests that bystander interventions–in which bystanders ally themselves with targets of harassment–are highly effective at preventing SH and promoting inclusive organizational cultures [2-6], but Michigan medical students aren't taught skills to intervene in SH in clinical settings.

Design: Instructional methods and materials used:
We conducted 5 focus groups and 7 in-depth interviews of senior clinical students (n=26) to understand students' experiences of SH. Using this data, we conducted a 1-hour bystander intervention training for early clinical students (n=29) consisting of small-group discussions of 6 hypothetical SH cases facilitated by senior students. SH concept knowledge was assessed using pre- and post-intervention surveys.

Outcomes:
Major themes from focus groups: (1) Un-addressed harassment in clinical settings can be distressing for both targets and bystanders. (2) Women of color, queer, and trans individuals experience heightened distress due to co-occurring marginalized identities. (3) Students want institutions to address student SH through policy and education. Bystander intervention training increased student knowledge of SH concepts by 35% (p<0.01) and bystander intervention strategies by 67% (p<0.01).

Feasibility and transferability for adoption:
Strengths: (1) Sample included students of diverse race/ethnicities and genders. (2) Study utilized mixed methods to characterize students' SH and bystander intervention experiences. (3) Intervention designed and implemented by members of the affected community.
Limitations: (1) Single-center study with small sample sizes. (2) Self-selected sample of students with prior interest in topic.

References:

1. National Academies of Sciences E, Medicine. Sexual harassment of women: climate, culture, and consequences in academic sciences, engineering, and medicine.National Academies Press; 2018.
2. Rowe M. Fostering Constructive Action by Peers and Bystanders in Organizations and Communities. Negotiation Journal. 2018;34(2):137-163.
3. Bowes-Sperry L, O'Leary-Kelly AM. To act or not to act: The dilemma faced by sexual harassment observers. Academy of Management Review. 2005;30(2):288-306.
4. Knapp DE, Faley RH, Ekeberg SE, Dubois CL. Determinants of target responses to sexual harassment: A conceptual framework. Academy of Management Review. 1997;22(3):687-729.
5. Hershcovis MS, Neville L, Reich TC, Christie AM, Cortina LM, Shan JV. Witnessing wrongdoing: The effects of observer power on incivility intervention in the workplace. Organizational Behavior and Human Decision Processes. 2017;142:45-57.
6. McDonald P, Charlesworth S, Graham T. Action or inaction: Bystander intervention in workplace sexual harassment. The International Journal of Human Resource Management. 2016;27(5):548-566.

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An Innovative Approach to Develop Integration of Basic Science and Clinical Medicine in the Clerkships- a Pilot Study Using Patient Simulation Based Learning Activity

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Stephanie Mann, The University of Toledo College of Medicine
Deepa Mukundan, The University of Toledo College of Medicine

Abstract Body:

Objective or purpose of innovation:
The objective of this innovation is to determine if the re-introduction of core foundational science concepts strengthens student's learning during their clinical rotations.

Background and/or theoretical framework and importance to the field:
Principles of cognitive science can facilitate integration and retention of basic science concepts during the clinical years. Studies have shown that integration improves diagnostic accuracy and understanding of key clinical features[1]. The major obstacles are determining the optimal timing and the availability and preparedness of clinical faculty to deliver the previously learned basic sciences[2-4].

Design: Instructional methods and materials used:
The instructional approach was based on facilitating student's construction of cognitive schemata to facilitate the development of clinical reasoning. The clerkship director selected a simulation session based on diabetic ketoacidosis to pilot the program and identified appropriate basic science faculty expert to deliver the content. The session starts with students working their way through the physical examination and laboratory test results, facilitated by the clinical faculty, to identify the most probable differential diagnosis. After that, the basic science faculty gives a chalk-talk about important concepts linked to the disorder. Finally, the clinical faculty discusses patient management options.

Outcomes:
The students described this approach as a great positive step with 89% strongly agreeing that it was helpful, while 11% agreed and no one disagreed.

Feasibility and transferability for adoption:
The strength was that students could solidify their knowledge by aligning diagnosis and management with the pathophysiology, in a team-teaching setting facilitated by both clinical and basic science faculty. The limitation was that the study was conducted in one clerkship with one group of students with no follow-up data.

References:
1. Lisk K, Agur AM, Woods NN. Exploring cognitive integration of basic science and its effect on diagnostic reasoning in novices. (2016) Perspect Med Educ. 5:147–153.

2. Report by Association of American Medical Colleges. (2001) Contemporary Issues in Medicine: Basic Science and Clinical Research.
3. Spencer AL, Brosenitsch T, Levine AS, and Kanter SL. Back to the Basic Sciences: An Innovative Approach to Teaching Senior Medical Students How Best to Integrate Basic Science and Clinical Medicine. (2013) Academic Medicine, 83 (7):662-669.
4. Bandiera G1, Boucher A, Neville A, Kuper A, Hodges B. Integration and timing of basic and clinical sciences education. (2013) Med Teach. 35(5):381-387.

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An innovative self-directed video-based course to improve medical students' note writing

Submission Type: Innovations Abstract
Accepted as: Poster

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Valeriy Kozmenko, University of South Dakota, Sanford School of Medicine
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Abstract Body:

Objective or purpose of innovation:
The University of South Dakota Sanford School of Medicine (USDSSOM) developed a video series of standardized patient (SP) encounters to help students improve their note writing skills for the end of third year Objective Structured Clinical Examination (OSCE) and USMLE Step 2 CS patient notes.

Background and/or theoretical framework and importance to the field:
USMLE Step 2 CS note failures are increasing nationally.   The same occurs with OSCE, despite note writing activities and availability of a computer based program to practice note writing within the ten minute limitation expected for USMLE Step 2 CS and our OSCE.

Design: Instructional methods and materials used:
USDSSOM created a collection of video cases showing interaction between a student doctor and a SP. Students watch the video, develop an assessment and plan, and document a note using the software. Upon completion of the note, a grading checklist is provided which allows the student to self-grade their note. The process can be repeated until proficiency is achieved.

Outcomes:
The program allows for automated data collection. Correlations were drawn between the practice scores and the OSCE note writing scores. Comparisons were made between participants and nonparticipants. In the first class cohort, note writing scores improved overall for the OSCE (18% fail rate vs 42%). Only 22% of participants required note remediation vs 77% for non-participants. Passing rates for Step 2 CS are not known for the entire class cohort at this time.

Feasibility and transferability for adoption:
Students can practice note writing in the USMLE Step 2 CS format with the associated time and character count restrictions using self-assessment rubrics. This minimizes cost of implementation.
Early results show promise.
Small class size is a limitation.

References:
Tervo RC, et al, 1997, SD J Med, 50(5):153-6.
Jang HW, et al, 2014, BMC Med Ed, 14:56.

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An Integrative approach to Course Design and Curriculum Mapping at Wayne State University School of Medicine

Submission Type: Innovations Abstract
Accepted as: Poster

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Jennifer Mendez, Wayne State University School of Medicine
Sonal Patel, Wayne State University School of Medicine

Abstract Body:
Objective or purpose of innovation:
This inter-disciplinary collaboration aimed to develop a comprehensive curriculum map for a Food Insecurity course. This curriculum map served multiple purposes, 1.) Course alignment with IOM Behavioral and Social Science Priority Topics, 2.) Integration of multiple units' educational activities in a single course, 3.) Evidence-based practices for the course design, 4.) Meaningful, active learning activities for our medical students, and 5.) Alignment of student performance assessments to course goals and objectives.

Background and/or theoretical framework and importance to the field:
Nearly 50 million people in the United States are food insecure, making it a leading health and nutrition concern; when families lack access to adequate food due to limited resources and have limited income, numerous potential negative health consequences may occur[2].The Wayne State University School of Medicine Office of Learning and Teaching aims to collaborate with UGME Stakeholders to improve the design, development, and delivery of curricula to create effective and engaging educational materials and to prepare our students to serve our urban patient population.

Design: Instructional methods and materials used:
A multi-disciplinary team worked together to develop the curriculum map.Learning activities and instructional strategies were varied (e.g., individual, small/large group work, role plays, etc.) and utilized a variety of technology (e.g., movie clips, podcasts). Assessments included pre- and post-tests regarding food insecurity knowledge, discussion boards, portfolio reflections, peer-evaluation, and capstone project).

Outcomes:
All of the project aims were met through the development of our curriculum map. Preliminary results of student satisfaction and evaluation of capstone projects indicate that this multi-disciplinary curricular approach was successful.

Feasibility and transferability for adoption:
Strength: Leveraging a plethora of University resources to design a comprehensive, effective course for medical students.

Limitation: Missed opportunity to enhance course design and delivery through involving medical students in all stages of course planning.

References:
1. Wight, V., & Thampi, K. (2010). Who Are America's Poor Children? Examining Food Insecurity Among Children in the United States.
2. Gundersen, C., & Ziliak, J. P. (2015). Food insecurity and health outcomes. Health affairs, 34(11), 1830-1839.
3. Vanselow, N., & Cuff, P. A. (Eds.). (2004). Improving medical education: Enhancing the behavioral and social science content of medical school curricula. National Academies Press.

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An interdepartmental collaboration leads to innovative design for verifying required clinical experiences, mid-clerkship feedback, and direct observation of students' core clinical skills

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Dana Hartman, University of Iowa Roy J. and Lucille A. Carver College of Medicine

Abstract Body:

Objective or purpose of innovation:
The Carver College of Medicine (CCOM) relied on an external vendor's software to track students' required clinical experiences (RCEs). This reliance created challenges: the student interface required extensive site navigation; it wasn't suitable for mobile devices; reports for individual clerkships and administration were expansive spreadsheets requiring data sorting/reformatting; resolving discrepancies between admin- and clerkship-level reports was time consuming and data accuracy was questionable.

Background and/or theoretical framework and importance to the field:
Frustration peaked when compiling data for a re-accreditation self-study. One conclusion of the study and visiting LCME team was the system was insufficient. A team was formed to assess alternative products vs. an internally-developed application; it concluded an internal application was needed, incorporating input from clerkships and students. The system had to be functional for students entering clinical training 01/2019 and LCME's expectation by 04/2019.

Design: Instructional methods and materials used:
Training for users of the system labeled CLERX were completed on schedule. Design features include: portable device access for students; automatic direction to students' current clerkship/RCEs; clerkships' ability to view students' RCE completion/progress via a single dashboard; administrators' ability to view completion rates for required clerkships from a single dashboard.

Outcomes:
The time required of clerkships to monitor RCE completion has reduced by approximately 60%. Documentation to the LCME in 04/2019 confirmed successfull implementation of the system and data verifying 100% of students in core clerkships for Q1/2019 completed their RCEs, demonstrated clinical skills, and received mid-clerkship feedback.

Feasibility and transferability for adoption:
The system's design lent itself to broader uses. The team agreed other accreditation standards could be tracked...observation of students' clinical skills and mid-clerkship feedback. CLERX was designed so students can log dates these activities occur and upload evaluators' documentation. CLERX can be fully operational if integrated with student/clerkship scheduling databases.

References:
N/A

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Are They Watching? Three Years of Flipped Education Using Video

Authors:

Max Anderson, University of Illinois College of Medicine
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Abstract Body:

Objective or purpose of innovation:

The purpose of our poster is to take a close look at analytics of video viewing habits among medical students at the University of Illinois College of Medicine and specifically in one particular block course. Attendees will be able to adopt our model of data analysis to replicate it at their home institutions.

Background and/or theoretical framework and importance to the field:

Many medical schools across the country struggle with finding effective and attainable processes for producing instructional content and supporting learning objectives, while integrating the strengths of face-to-face and web-based learning environments. Faculty are increasingly creating and implementing learner-centered, technology-rich learning experiences designed to fit a flipped classroom model of instruction. In the scholarly literature, research is being done to determine if there is an average 'right' amount of time devoted to the flipped model of instruction[3]. Other researchers have focused on the various aspects of video instruction including development time[2] and issues with attendance to lectures when recordings are available[1].

Design: Instructional methods and materials used:

This will be a poster session so the primary engagement with the audience will be around models of analysis for interpreting data from the University of Illinois College of Medicine's lecture capture system, Echo360, Osmosis, and other 3rd party video delivery tools.

Outcomes:

* Gain an understanding of student use of faculty-produced and other 3rd party videos in a flipped instructional model
* Glean information from our experiences to apply models of analysis to their own databases to increase value of video-based instructional materials.

Feasibility and transferability for adoption:

A strength and a potential limitation is that we looked at just one block course, and two specific weeks within that course.

References:
1 Gupta, A., Saks, N. S. (2013). Exploring medical student decisions regarding attending live lectures and using recorded lectures. Medical Teacher, 35(9), 767-771.
2 Norman, M. (2017). Twelve tips for reducing production time and increasing long-term usability of instructional video. Medical Teacher, 39(8), 808-812.
3 Pettit, R. K., McCoy, L., & Kinney, M. (2017). What millennial students say about flipped education. Advances in Medical Education and Practice, 8, 487-497.

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Auntie Na's Healthy Oasis Corner Store Program: A Medical Student Nutrition Education Training and Community Health Screening Program in the City of Detroit.

Submission Type: Innovations Abstract
Accepted as: Poster

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Jennifer Mendez, Wayne State University School of Medicine

Abstract Body:

Objective or purpose of innovation:

To build medical student skills and confidence in providing effective nutrition counseling and establishing rapport with community members.

Background and/or theoretical framework and importance to the field:

Literature on nutrition counseling prevalence among physicians shows that many do not feel prepared providing effective nutrition counseling. Therefore, physicians may have limited skills in counseling their patients on the nutritional aspects of chronic diseases that can be controlled through a healthy diet. The Auntie Na's Student Organization Healthy Oasis corner store program addresses this by helping medical students make connections between nutritional education and healthcare outside the clinic.

Design: Instructional methods and materials used:

Weekly health screening centers are placed at a corner store in the Nardin Park neighborhood of Detroit that has a median household income of $23,869 and 51.6% using Food Stamps/SNAP benefits. Out of five stores, two were selected based on location, zip code, foot traffic, proximity to public transportation and parking. Medical students from Wayne State University School of Medicine volunteer to measure blood pressure, blood glucose, and cholesterol of patrons. Students then discuss the patron's diets and educate them on healthy alternatives. Patrons are then administered a survey that determines if they benefited from the program and are provided $6 to purchase healthy produce from the corner store with the assistance of a medical student directing them towards healthier options at the store. Students are administered a survey after participation to assess how participation built nutritional counseling skills.

Outcomes:

Survey data is currently being collected.

Feasibility and transferability for adoption:

Providing students with an avenue to provide nutritional counseling to community members outside the clinic helps students develop a toolbelt of nutritional counseling and rapport-building skills for use in clinical practice, but the program is currently limited to developing nutritional counseling skills at a foundational level.

References:
Adams, K. M., Kohlmeier, M., Powell, M., & Zeisel, S. H. (2010). Nutrition in medicine: nutrition education for medical students and residents. Nutrition in Clinical Practice, 25(5), 471-480.
Data Access and Dissemination Systems (DADS). "American FactFinder." American FactFinder, October 5, 2010. https://factfinder.census.gov/faces/nav/jsf/pages/community_facts.xhtml?src=bkmk.
Zenk, S.N., et al., Fruit and vegetable access differs by community racial composition and socioeconomic position in Detroit, Michigan. Ethn Dis, 2006. 16(1): p. 275-80.

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Bringing PBL to Life: Linking to Standardized Patient Cases and Real-World Experiences

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Kristine Carpenter, Carle Illinois College of Medicine
Judith Rowen, Carle Illinois College of Medicine - University of Illinois College of Medicine

Abstract Body:

Objective or purpose of innovation:

The Carle Illinois COM preclinical curriculum is delivered through organ-system blocks via problem-based learning (PBL) cases. We sought to link our M1 Introduction to Clinical Practice (ICP) and PBL courses for better integration.

Background and/or theoretical framework and importance to the field:

Learning through cases (including PBL) is widespread in medical curricula[1], and often separate from the teaching of clinical skills[2]. One of the recommendations for enhancing the scaffolding of learning in PBL is ensuring authenticity[3]. Integration improves by building curricular links[4]. We sought to create authentic linkage between our PBL and clinical skills courses.

Design: Instructional methods and materials used:

Standardized patients (SPs) representing PBL cases assist with teaching communication and physical examination skills. Students have community-based experiences with patients related to the PBL cases. Faculty designing ICP drafted a list of desired skills and reviewed the PBL cases to find opportunities for overlap. Example: the cardiovascular course patient with chest pain was developed into a SP script – students obtain a history, perform a physical examination, and counsel the patient about his medications. Students interview patients attending cardiac rehabilitation to learn how their recent MI impacted them.

Outcomes:

Seven PBL-related SP cases and six community experiences were integrated into ICP. The SP encounters were the most highly rated component of the course, and the community experiences scored better than the overall course evaluation. One unexpected but welcome outcome is that our students do not perceive a separation between their PBL course and ICP as reflected in evaluation comments.

Feasibility and transferability for adoption:

Having SPs portray PBL case patients adds authenticity, increases integration and students enjoy it. Meaningful real-world clinical experiences can enhance case-based learning.

References:
1. Association of American Medical Colleges. Instructional Formats Used in the Curriculum. AAMC Curriculum Inventory, 2017-2018. https://www.aamc.org/data-reports/curriculum-reports/interactive-data/instructional-formats-used-curriculum. Accessed October 31, 2019.

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Building An Innovative Curricular Intervention for Addiction Medicine Certification

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Abstract Body:

Objective or purpose of innovation:

To develop a collaborative curricular intervention program that provides online training to physicians seeking board certification in the specialty of Addiction Medicine (ADM).

Background and/or theoretical framework and importance to the field:

By 2020, conservative estimates indicate a need for 7,500 full-time certified addiction medicine physicians to meet public health demands nationwide. There is a clear and present need for more highly trained physicians to meet demand for prevention and treatment services that directly addresses the addiction crisis.

Design: Instructional methods and materials used:

The Michigan Collaborative Addiction Resources and Education System (MI CARES) was developed to educate providers on how to enter the specialty of Addiction Medicine (ADM) certification. A comprehensive curriculum of 25 addiction medicine core modules are being developed for the program. An elearning software (Articulate 360) was chosen as the preferred platform for module design and delivery.

Outcomes:

Anecdotal data collected since Spring 2019 from 47 registered participants indicate that a majority of participants are Family Physicians. While it is favorable that our program has been able to cast a wide net over primary care (n=23), we have also experienced increased participation (n=24) from Internal Medicine, Emergency Medicine, and OB/GYN physicians. Participants's age demographic ranges between 25-44 (49%). This is great news, as a younger generation of physicians can enhance a long-term sustainable workforce.

Feasibility and transferability for adoption:

MI CARES integrates online modules with free CME, formative and summative assessments, group discussions and communications. A limitation is that some areas of the program require dedicated staff time to help participants navigate some of the most difficult sections of the certification process.

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Combining Face to Face and Asynchronous Learning in Pediatrics to Improve Clinical Reasoning in Medical Students

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Abstract Body:

Objective or purpose of innovation:

Students enter the pediatric clerkship with little experience of clinical reasoning. Using differential diagnosis and disease comparison exercises, we created a course which combined patient exposure, face-to-face instruction and asynchronous E-learning. This study evaluated students' perceptions of the course.

Background and/or theoretical framework and importance to the field:

Adult learning theory emphasize involving learners in creating goals, furthering knowledge, utilizing intrinsic motivation, and taking responsibility to teach themselves. E-learning provides an avenue for this by allowing flexibility in the content, pace and methodology.

Design: Instructional methods and materials used:

During inpatient experience, students performed two differential diagnoses exercises based on their patient encounters. They met as a group weekly for 30 minutes and with faculty for face-to-face instruction to review the differential. During the second exercise, students reviewed the differential by themselves in an asynchronous online discussion with a faculty member, utilizing iPads and the iTunes U app. A diseases catalog was created to support them. Students' perceptions of the course were harnessed through focus groups and a survey.

Outcomes:

A total of 59 participated in the course and 23 were enrolled in the study. Seven students participated in the focus group. Students' satisfaction with the course was high. Participants reported the course to be well-organized and relevant to what they needed to learn. Course objectives were mostly rated as "completely accomplished." Slightly lower scores were given on course navigation and direction, and for novelty of content. Three themes emerged from the focus group: perceived benefits; learning preferences; and perceived challenges.

Feasibility and transferability for adoption:

The innovation helped when faculty, time, patient types, and space are limited. A limitation was the challenge of orienting students to the course given that they took the course at different times of the rotation.

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Common Language and Share Experience: the MCW Common Read Program

Submission Type: Innovations Abstract
Accepted as: Oral Abstract Presentation

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Abstract Body:
Objective or purpose of innovation:
Healthcare delivery requires collaboration of multiple disciplines, usually under significant stress.[1-4] This leads to lack of connection between colleagues and between the provider and patient. We implemented a Common Read program that provided a forum for learners, faculty, nurses and allied providers to reflect on a reading that highlights fractures in our healthcare system.

Background and/or theoretical framework and importance to the field:
Students, faculty, and staff organized to launch a Common Read program with the following goals:
      1) Engage the community in a shared experience
      2) Promote robust discussions
      3) Provide a starting point for building connections
      4) Equip readers with skills to approach the world with cultural humility and curiosity

Design: Instructional methods and materials used:
The committee garnered support from the Dean's office and the Kern Institute, which funded copies of the 2019 book for all first-year medical students and a visit from the author. Subcommittees directed the creation of a logo, website, social media presence, and book discussions (virtual and in-person).

Outcomes:
Momentum and 'buzz' around the program led to the involvement of residency programs,

multiple departments, and other groups outside of the medical school. In-person discussions had a combined 110 participants. A 12-week Twitter book club garnered 3,866 engagements; our Twitter and Instagram accounts attracted 618 followers. The 2019 Common Read selection was checked out from the medical school library 102 times. Over thirty unique book recommendations were submitted for the 2020 Common Read.

Feasibility and transferability for adoption:
Strengths include student leadership, faculty buy-in, student-designed branding, engagement of the larger medical education community through social media, and a sense of community ownership. Growth opportunities include expansion to regional campuses and health system engagement.

<u>**References:**</u>

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Count Me In! Reporting and Rewarding Faculty Development Activities

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Abstract Body:

Objective or purpose of innovation:

We created a collection of faculty development resources which can be reviewed asynchronously or in small groups, are disseminated through a web-based learning hub and engagement analytics are collected to inform program improvements and growth.

Background and/or theoretical framework and importance to the field:

Faculty development has typically been provided through in person sessions, where documentation of participation could be done in the moment [1]. With busier clinical practices, less discretionary time, and competing priorities our health professions educators need faculty development resources which can be reviewed asynchronously and accessed whenever works best for them[3]. Documentation of completion is often only feasible through a laborious pre-access login process, which for required learning is tolerated but for discretionary faculty development is one obstacle too many[2,4].

Design: Instructional methods and materials used:

We compiled a learning hub requirements document, benchmarked external practices, enlisted a diverse group of stakeholders, piloted several platforms, and collected usability, feasibility and outcomes data.

Outcomes:

Transition from episodic, in person, administratively burdensome, and time consuming faculty development programming to easily accessible, micro-learning, multi-modal, individualized faculty development career pathways. Engagement data is visualized through personal dashboards, used for accreditation documentation, to recognize and reward the contribution of our educators, and contributes to the impact assessment of faculty development on the learning environment.

Feasibility and transferability for adoption:

There is a widening gap between how we have traditionally delivered faculty development programming and how our chronically overloaded health professions educators need to be able to access, review and complete it. The creation of a catalog of e-learning materials and resources necessitated a novel web-based delivery and reporting system that allowed faculty to easily access, review and document completion of small snippets of development materials.

References:
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2. Steinert Y, Macdonald ME, Boillat M, Elizov M, Meterissian S, Razak S, Ouellet MN, and McLeod P. Faculty development: if you build it, they will come Medical Education 2010: 44: 900–907

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Creating Opportunities to Provide Health Systems Science, Communication, Ethics and Wellness Content during Clerkship Training

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Abstract Body:

Objective or purpose of innovation:
The practice of medicine today requires an understanding of Health Systems Science (HSS), the ability to self-reflect and prevent burnout, to consider ethical perspectives, and to communicate effectively with patients in complex situations. We designed a curriculum to be administered during the clerkship phase of training within a multi-campus system.

Background and/or theoretical framework and importance to the field:
The largest medical school in the nation, Indiana University School of Medicine (IUSM) has a 9 campus system with 364 students participating in eight clerkships in the third year. HSS includes topics related to improved healthcare delivery for patients and populations. HSS content delivery during clinical experiences is difficult to provide when students are distributed across different clerkships and multiple clinical locations statewide.

Design: Instructional methods and materials used:
IUSM developed 9 Intersession days interspersed between clerkship rotations to target these needs. Small group activities were designed to address three areas: Behavioral Health and Communication, Medical Ethics and Wellness, and Population Health/Community Health Improvement. Sessions focused on complex patient and interprofessional interactions, reflective practice and a community health improvement project (CHIP) addressing a health priority of the Indiana State Department of Health. Students participated in mentored small groups and ultimately produced a mini-grant project for their identified CHIP.

Outcomes:
Student evaluations indicated student satisfaction with their peer and faculty interactions and noted improved abilities to discuss difficult topics with their patients and caregivers. Improved patient and self advocacy was also shown. Students had mixed feelings regarding the virtual nature of CHIP rather than direct community involvement.

Feasibility and transferability for adoption:
This longitudinal course addressed several key curricular needs of today's physicians in training and was accomplished within a complex multi-campus system. While students report improved comprehension and readiness, further investigations will be required to examine the long-term impact.

References:
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Demystifying the OSCE

Submission Type: Innovations Abstract
Accepted as: Poster

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Abstract Body:

Objective or purpose of innovation:
Does an orientation and practice scenario help students alleviate anxiety, feel more prepared, and have a better understanding before their first graded OSCE?

Background and/or theoretical framework and importance to the field:
Few students have prior experience with the OSCE model of assessment. Entering an unknown environment to be assessed by interacting with a stranger portraying a patient can be daunting, and may lead to misunderstandings regarding scoring and the role of standardized patients (SPs). Increased anxiety can negatively impact performance on early learners' high-stakes assessments. This activity introduced students to the role of the SP, the relationship between student instructions and the rater checklist, and the exam environment.

Design: Instructional methods and materials used:
Students were provided information about how SPs are trained to answer questions, wait for appropriate follow-up questions, and how items in the case correlate to the curriculum. They received a case template used for SP training, followed by an actual scenario. Students rotated roles as physician, patient, and observer/rater. The arrangement allowed for low-stakes practice and feedback in the genuine assessment environment.

Outcomes:
Students evaluated the experience, including an overall rating and open-ended comments. Results were aggregated and analyzed for common themes. Students felt that the session was a good introduction to the OSCE process, provided experience with the environment, and helped them to feel more relaxed and prepared.

Feasibility and transferability for adoption:
Allowing students to model each role in the OSCE gave them a deeper appreciation for the assessment which helped alleviate anxiety during their initial graded OSCE. It also focused their learning on essential elements such as asking open-ended questions at the beginning of the encounter. A limitation was the complexity of coordinating the different roles for >200 students.

References:
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Development of Behavior Anchored Rating Scales and rater training for assessment of faculty's teaching skills

Submission Type: Innovations Abstract
Accepted as: Poster

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Abstract Body:

Objective or purpose of innovation:
To create a reliable and valid checklists for rating Objective Structured Teaching Evaluations (OSTE).

Background and/or theoretical framework and importance to the field:
In 2017 Michigan State University and Spectrum Health created a faculty development program to empower physicians to be more effective teachers for residents and medical students. The highlight of the program is a three station videotaped OSTE where faculty are assessed on their teaching skills in a)Direct Observation, b)Giving Feedback, and, c)Clinical Skills Teaching. Standardized checklists are used for observation and feedback. How do we ensure that the rater checklists are reliable and valid and that the given feedback is credible?

Design: Instructional methods and materials used:
Three course facilitators developed three Behavior Anchored Rating Scale (BARS) rubrics for the OSTE stations, similar to the principles used to develop the Milestones. Each rubric consists of five content-specific domains, and one overall performance domain, and four different learner levels (Novice, Intermediate, Advanced, Superior). A 2.5 hour rating course was offered to help raters familiarize with the new rubrics. Raters were asked to watch OSTE video's and to rate simultaneously.

Outcomes:
The course was attended by five raters. They commented that the new rubric took away biases, helped them to evaluate behaviors more objectively, and, was a good reminder to pay attention to all aspects of the behavior. The raters pointed out problems in the wording and areas that should be better represented in the rubric, hence further improving the rubric.

Feasibility and transferability for adoption:
The process of developing a BARS rubric, offering it as a training, and evaluating it after using it in practice increases the trust in the instrument's validity and reliability, and it should improve the quality of the feedback content. Data analysis of the quality of the feedback has not been performed yet.

References:
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Debnath SC, Lee BB, Tandon S. Fifty years and going strong: What makes Behaviorally Anchored Rating Scales so perennial as an appraisal method?. International Journal of Business and Social Science. 2015 Feb 1;6(2).

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Development of parallel exams for medical school curricula

Submission Type: Innovations Abstract
Accepted as: Poster

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Abstract Body:

Objective or purpose of innovation:
To develop a streamlined process for creating equivalent final exams for a medical school curriculum.

Background and/or theoretical framework and importance to the field:
Many schools assess Medical Knowledge using in-house developed multiple choice exams. A challenge with such exams arises when students fail the exam and need to remediate, as remediation exams may be inadequately validated since relatively few students take them. To address this, we developed equivalent final exams that were comparable in difficulty and validation characteristics.

Design: Instructional methods and materials used:
Starting in 2016, we asked each block leader in Med 1-2 to develop equivalent final exams. The goal was to assess all learning objectives equally on each exam, and have both versions be comparable with respect to length, difficulty, and comprehensiveness. Using ExsamSoft, each question is tagged with author and objective covered. Questions were assigned to Exam A or B based on objective assessed, previous use (final or remediation exam), and difficulty. In addition, question "enemies" were identified that were similar questions covering the same objectives. Enemies were assigned to opposite versions of the exam. After initial assignment, questions were moved to balance exam characteristics, while ensuring that equal objective coverage was maintained.

Outcomes:
Students were assigned randomly to take Exam A or Exam B. Approximately 800 final exams (400 each Exam A and B) have been administered over the eight blocks in Med 1-2. The overall average of Exam A was 84.96 and Exam B was 84.92, and the average difference in means was 1.58.

Feasibility and transferability for adoption:
Creating equivalent final exams provides for a readily available remediation exam that has been validated with respect to difficulty and comprehensiveness ensuring that remediation exams are fair and robust.

References:
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Engaging the Hidden Curriculum: A Pilot Intervention Using the Anatomy Lab to Teach Ethics & Professionalism

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Abstract Body:
Objective or purpose of innovation:
To create a reflective ethics and professionalism teaching intervention for medical students helping process the experience of their first anatomy lab.

Background and/or theoretical framework and importance to the field:
Anatomists contend students learn more than just anatomy from their experience in the dissection lab. Through the hidden curriculum, students are introduced to the emotional and cognitive aspects of death along with behavioral professional skills[1]. While the LCME emphasizes ethics and professionalism in medical education, there is a lack of robust pedagogical integration between anatomy and bioethics[2,3].

Design: Instructional methods and materials used:
A three-part, voluntary integrated ethics and professionalism session was created as part of first year anatomy: 1) pre-lab online module; 2) first dissection; 3) face-to-face session. Students completed a pre- and post-session survey assessing their cognitive and affective readiness, along with awareness of the associated ethical and professional components of the cadaver experience. Online, students learned the benefits, regulations/policies, and ethical/professional obligations in anatomy lab. The face-to-face session included small group ethics case discussion, and debriefing their first cadaver dissection experience. Students were also encouraged to submit a personal narrative as part of their reflective portfolio.

Outcomes:
Participation was 57% (n= 119). The percentage of students being both "intellectually prepared" and "emotionally prepared" for the anatomical experience increased significantly. Quantitative assessment showed 5-point Likert scale scores above 4 in all categories assessed. Qualitative comments reflected satisfaction with grasping professional duties and better cognitive and emotional preparation.

Feasibility and transferability for adoption:
Our intervention was strengthened by its interactive, reflective, and multi-modal approach, and adds to the scant anatomy-ethics integration in the literature. Limitations included: lack of prior data, curricular time allocation, and the voluntary nature of the pilot.

References:
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Evaluation of a Virtual Reality Task to Educate Undergraduate Medical Students on Peripheral and Collateral Circulation in Cardiology

Submission Type: Innovations Abstract
Accepted as: Poster

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Abstract Body:

Objective or purpose of innovation:
This presentation reports our experience and evaluation of a case-centered VR task enabling students to develop a 3-dimensional understanding of peripheral and collateral circulation, concepts not easily understood from 2-dimensional images.

Background and/or theoretical framework and importance to the field:
There is growing interest in utilizing virtual reality (VR) in Undergraduate Medical Education[1]. As with any new educational tool, it is important to investigate the most effective uses of VR.

Design: Instructional methods and materials used:
Groups of four students, given access to computers running the VR version of Organon (a commercially available anatomy program) and Vive headsets (commercially available VR hardware), were presented with a clinical case of a patient exhibiting symptoms of aortic coarctation. They were then asked to complete the following tasks: 1) propose the most likely diagnosis; and 2) using VR, diagram the most likely route for blood flow around pre- or postductal coarctation. Students were also asked to complete a satisfaction survey and participate in a focus group discussion. Finally, students were assessed on this content in weekly NBME-style quizzes.

Outcomes:
Students achieved 96% correct on quiz questions. Nineteen students completed the survey and 3 participated in the focus group. Students had an overall positive opinion of the activity and survey responses exhibited a high correlation between its effectiveness and their intent of using VR for independent study (R=0.7). Interestingly, VR ease of use did not strongly correlate with activity effectiveness (R=0.3) or using VR for independent study (R=0.4). Additional correlational and focus group data will be provided.

Feasibility and transferability for adoption:
A theme from open-ended survey responses indicated that a strength was framing the VR task around a clinical scenario. Another theme highlighted students' perceived limitations related to features of the software.

References:
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Faculty Evaluation Toolkit for Program Directors: Complying with new ACGME requirements

Submission Type: Innovations Abstract
Accepted as: Poster

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Abstract Body:

Objective or purpose of innovation:
We propose an easy access template for residency program directors (PDs) to comply with new ACGME annual faculty evaluation requirement.

Background and/or theoretical framework and importance to the field:
The ACGME announced a new 2019 regulation requiring annual evaluation of all program faculty. Our institution oversees 89 ACGME-accredited programs over several sites and opted to provide a standardized evaluation template for PDs. We piloted an evaluation dashboard on our digital management system where all of the suggested templates are available to achieve the following goals: (1)reduce time and technical expertise required to comply and (2) incorporate best practices for evaluation across the enterprise.

Design: Instructional methods and materials used:
Initially developed by the PD of the Pathology and Laboratory Medicine Residency Program, a fellow in Medical Education worked with the GME Administrative Director and Accreditation Administrator to create a series of templates. The first draft included an introductory letter, instructions for collecting didactic reports and resident completion reports, and a resource page advertising faculty development opportunities. Meanwhile, our institution rolled out a new digital management platform for this initiative, where we worked with the Director of Technical and Educational Resources to automate processes for PDs and auto-populate templates where possible to encourage inclusion of those items to comply with best practices.

Outcomes:
We worked with our technology specialists to create a dashboard and user friendly interface on a new digital platform with two goals: (1) increase ease of access for PDs and evaluated faculty and (2) incorporate best practices enterprise-wide.

Feasibility and transferability for adoption:
We provide a template for our 89 programs to demonstrate compliance with ACGME requirements and foster standardization across programs. We report lessons learned, including how to design an institutional data management platform and communicate with IT personnel to tailor reports.

References:
N/A

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First Impressions Matter: A WARM Welcome to Clinical Clerkships and Communities in Rural Wisconsin

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Abstract Body:

Objective or purpose of innovation:

Students in the Wisconsin Academy of Rural Medicine (WARM)[1,2] at the University of Wisconsin School of Medicine and Public Health (UWSMPH) relocate from the central academic campus to one of three community-based, regional campuses for clinical training. To better prepare students to live and work in rural Wisconsin, a week-long curriculum that included small group, experiential, and reflective activities was created.

Background and/or theoretical framework and importance to the field:

There has been significant efforts to create more rural physicians and it is recommended that programs "be intentional" in rural preparation of learners[3].

Design: Instructional methods and materials used:

22 students completed the curriculum designed to introduce them to their regional community and health system, analyze epidemiological data regarding their region's health status, identify community assets, and strengthen cohort identity. Teaching methods included short lectures, small group discussion, rural community asset mapping, collaborative student presentations, autobiographical story-telling and self-reflection.

Outcomes:

Effectiveness was evaluated through a post-event online survey that 86% of students completed. The event's mean effectiveness rating was 3.7 on a 1-5 scale, with 100% of respondents giving it one of the highest three ratings: 3=Good (37%), 4=Very Good (58%) or 5=Outstanding (5%). It was rated most effective at "Helping you feel connected to the WARM learning community" (M=4.7), "Providing a useful introduction to your regional training site's community" (M=4.5) and "Familiarizing you with community and health system assets that promote rural health" (M=4.1).

Feasibility and transferability for adoption:

A 4-day interactive curriculum which highlighted rural community-based activities was successful in meetings its objectives. Results are limited by evaluation of student perception only. Clear central support as well as strong relationships with regional sites were keys to success.

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Following Up with Alumni 10 Years Post-Medical School Graduation

Submission Type: Innovations Abstract
Accepted as: Oral Abstract Presentation

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Abstract Body:

Objective or purpose of innovation:
Many schools with scholarly concentrations or research curricula struggle with how to follow up with graduates to determine if unique missions were achieved. We report on our approach to examine the impact of our research-focused curriculum for graduates 10 years post medical school graduation.

Background and/or theoretical framework and importance to the field:
We began this journey five years ago by meeting with stakeholders throughout the institution to define key questions we should consider for a longitudinal follow-up with graduates, whom we hope will become physician investigators given the medical school's mission. We used Social Cognitive Career Theory and Self Determination Theory as the conceptual frameworks for our inquiry. We purposefully decided to not initiate follow up with our graduates until 10 years given the literature[1]. To our knowledge, very few institutions collect information at the ten-year mark.

Design: Instructional methods and materials used:
This project represents the ongoing longitudinal outcomes of the CCLCM program. At this stage, a task force key stakeholders representing faculty, educational leaders, and alumni met todevelop domains, questions, and collection methods. Sample questionnaires were pre-piloted and RedCap was ultimately selected. Several rounds of revision occurred at the task force level before three rounds with pertinent stakeholders. Our institutional IRB approved an amendment to our existing data registry and we sent personalized invitations to graduates. Then, this was piloted.

Outcomes:
We learned that it was feasible to follow up with graduates ten year post graduation.

Feasibility and transferability for adoption:
We will revise annually collect information at the 10-year mark for graduates. Limitations include a small class size and the existence of a data registry. Others may need to create a data storage plan in conjunction with the questionnaire. Additionally, updated contact information is required to request participation with the follow-up. Finally, participation may vary widely.

References:
1 Dorothy A. Andriole & Donna B. Jeffe (2016) Predictors of full-time faculty appointment among MD–PhD program graduates: a national cohort study, Medical Education Online, 21:1, DOI: 10.3402/meo.v21.30941

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Health Advocacy Projects for Community Engagement

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Abstract Body:

Objective or purpose of innovation:

Health Advocacy Projects ("HAPs") address two main Health Advocacy curricular and institutional goals:

- Increase medical student skills related to community partner outreach
- Develop health advocacy projects that are tightly aligned with community partner goals

Background and/or theoretical framework and importance to the field:

Students report a lack of skills necessary to develop partnerships with community stakeholders in Health Advocacy work and also identify a strong preference for self-determining advocacy topics. Community partners request that student projects complement their priorities.

Design: Instructional methods and materials used:

In the pre-clinical 3 semesters, there are 15 hours of advocacy curriculum. The HAP is part of a required clinical rotation. The HAPs allow students to identify a topic and community partner, and require students to arrange meetings with the partner to identify shared goals and a project. Projects must be driven by community partner goals and needs. By the end of the rotation, students deliver the project, write a summary paper, and complete an evaluation. Community partners submit qualitative formative feedback.

Outcomes:

After 7 cycles (through Sept 2019), 286 HAP projects have been completed with more than 125 different organizations.

Learner Outcomes:

- 63.0% of students in 2019 report their likelihood of "Doing Health Advocacy Work in the Future" is "Somewhat Increased" or "Significantly Increased."
- 48.1% of students report their "Comfort Level with Health Advocacy Work" is Increased a "Fair Amount" or "Increased a Great Deal."

Partner Outcomes (% of received responses):

- 98.6% were pleased with student work
- 85.2% were willing to host future students

Feasibility and transferability for adoption:

The HAP allows for independence, which has been identified by students as a motivator for their engagement. Additionally, the HAP requires a limited amount of time and can conveniently fit

into a busy clinical rotation. Student independence and depth of project engagement rely on a robust Advocacy curriculum prior to this.

References:
N/A

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Improving Spanish-Speaking Performance Utilizing Standardized Patients in the Peer-Led Medical Spanish Program (PLMSP)

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Abstract Body:
Objective or purpose of innovation:
A Spanish Standardized Patient Exercise was recently implemented to prepare students for future patient encounters. This study aimed to assess student knowledge, language skills, and self-reported comfortability in Spanish-speaking patient encounters.

Background and/or theoretical framework and importance to the field:
According to the 2010 US Census, Hispanics constitute 18.1% of the nation's total population, a number that is expected to rise 28% by 2060. In 2009, our medical school developed a year long Peer-Led Medical Spanish Program (PLMSP) to address the emerging need for culturally competent Spanish-speaking providers practicing global health locally and abroad.

Design: Instructional methods and materials used:
Data was collected across three assessments: 1. A previously validated Interagency Language Roundtable (ILR) Comfortability scale administered throughout the year-long curriculum. 2. A Standardized Patient (SP) exercise administered at program end, including a checklist of 12 questions commonly asked when taking a patient history. 3. A student performance evaluation. Ninety first year medical students participated in this study.

Outcomes:
Findings showed 54.4% of students reporting improved ability to communicate effectively in most encounters by curriculum end. Average completion score among participants in the HPI checklist was 10.8/12 (90%), and average rating from the SP evaluation was 7.12/9 (very good performance). Findings suggest the effectiveness of the SP exercise in preparing students for patient encounters in Spanish. Students were able to complete a full history in Spanish that medical students are expected to complete in English.

Feasibility and transferability for adoption:
This PLMSP has the potential to impact both local patient encounters and short-term international health experiences with Spanish-speaking populations. Some limitations included medical student retention throughout the year long curriculum and difficulty finding standardized patient actors. Although not all students conclude this program with proficient skills, the impact

on improving cross-cultural communication is far-reaching to all limited-English proficiency patients.

References:
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Improving the quality of collaborative learning with a student survey of technical skills

Submission Type: Innovations Abstract
Accepted as: Poster

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Abstract Body:

Objective or purpose of innovation:

With increased focus on technology in medicine[1], there exists a challenge to create effective technology and innovation sessions for medical students with varied backgrounds. The Carle Illinois College of Medicine focuses on integrating engineering into medicine and has developed the Self Evaluation of Technical Skills survey (SETS) to improve its Medical Engineering, Design, and Innovation (MEDI) sessions.

Background and/or theoretical framework and importance to the field:

Traditional engineering pedagogies such as lectures and labs are challenging to transfer to medical education due to limitations of time and prerequisite knowledge. Employing active, collaborative approaches can leverage individual competencies to benefit the group[2].

Design: Instructional methods and materials used:

Three computer languages (R, Python, MATLAB) and one general skill (digital modeling) were identified as having repeated coverage in the Carle Illinois preclinical curriculum. SETS asked students to report prior experience with each computer language, digital modeling tools, and degree of recognition from relevant code samples. There was one free response question regarding personal interests. Students had four weeks to complete SETS online through Qualtrics; response rate was 100% (n=32).

Outcomes:

Data from SETS was used to group students by reported technical skill level (S1=None to S5=High) which informed cohort design for MEDI sessions.

	S1	S2	S3	S4	S5
R	15	7	7	3	0
MATLAB	1	3	10	7	11
Python	8	6	11	5	2
CAD	9	5	7	8	3

There was minimal troubleshooting and support for sessions grouped this way, and student satisfaction increased over prior years where groups were not stratified by experience.

Feasibility and transferability for adoption:

SETS was easily deployed, requiring a reasonable median time of 6.56 minutes to complete (one outlier removed). The data are self-reported, so likely contains multiple biases. However, candid responses are reasonably expected with low stakes involved.

References:

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Interprofessional Practice: Collaborating to Educate Resident Physicians

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Abstract Body:

Objective or purpose of innovation:
The objective was to empower primary care clinic nursing staff as educators for resident physicians to strengthen residents' knowledge of and attitudes toward interprofessional practice.

Background and/or theoretical framework and importance to the field:
Interprofessional care leads to improved patient outcomes and increased physician and staff satisfaction[1,2,3]. Thus, it is essential for trainee physicians to learn foundational skills necessary to work within interprofessional teams. Recent studies have highlighted that interprofessional education could be beneficial for the residents' ability to participate in and lead these teams[4,5].

Design: Instructional methods and materials used:
Kern's model for curriculum development was applied. Curriculum content was designed based on ACGME Milestones for Interpersonal Skills and Communication and Interprofessional Collaborative Practice Core Competencies. The curriculum consisted of two 1-hour seminars for first-year Internal Medicine residents. Seminars consisted of a combination of active and case-based learning and were led by a physician and various nursing staff from the clinic. The first seminar introduced interprofessional practice and effective teamwork through an activity and discussion, and the second seminar utilized real-life cases to guide discussion about roles, responsibilities, and collaboration.

Outcomes:
A total of 120 first-year residents participated from 2015-2018. The majority of residents identified the seminars were beneficial to better understand roles (87%), communication (85%), and interprofessional practice (84%). After this training, most residents (85%) indicated they would like additional training about working effectively within interprofessional teams in graduate medical education.

Feasibility and transferability for adoption:
One strength is that nursing staff are incorporated in leading education of residents, from curriculum development and implementation. A strength and limitation is the need to engage interprofessional staff, which demands understanding various clinical structures and partnership with leaders.

References:
1. E.L. Wooding, T.C. Gale & V. Maynard (2019) Evaluation of teamwork assessment tools for interprofessional simulation: a systematic literature review, Journal of Interprofessional Care, DOI: 10.1080/13561820.2019.1650730
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3. Sanders M, Richards D, Panahi L. Interprofessional education (IPE) in a pediatric simulation: case of an infant with fever. MedEdPORTAL. 2013;9:9515. https://doi.org/10.15766/mep_2374-8265.9515
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9. Berrocal Y, Fisher J, Regan J, Christison AL. Dehydration: a multidisciplinary case-based discussion for first-year medical students. MedEdPORTAL.

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Knowledge Gaps in Patient Discharge

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Abstract Body:

Objective or purpose of innovation:
This study examined gaps in medical students knowledge about discharging patients.

Background and/or theoretical framework and importance to the field:
Discharging a hospitalized patient is an important activity that interns are expected to perform during residency. Despite this, over 95% of students desire additional training[1]. This needs assessment identifies areas that medical students feel they need additional instruction.

Design: Instructional methods and materials used:
As a part of the fourth-year internal medicine sub internship, medical students (n=58) were asked to complete a pre-questionnaire, which included writing one or more questions they had about the patient discharge process. Through thematic analysis the areas covered by most students regarding their gaps in knowledge of the discharge process were assessed.

Outcomes:
The self reported gaps in knowledge were:
- Logistics of the discharge process
- Role of case managers, social workers
- Responsibilities of physicians, nurses and social workers
- Facilitating communication between nursing, social work and discharge planner
- Providing nursing instructions
- Addressing transportation issues
- Scheduling appointments
- Setting up home health and its criteria
- Indications for patient going to a nursing facility
- Types of nursing facilities and their indications
- Discharge summaries, their length and required elements
- Medication reconciliation process
- How to prevent readmission
- Navigating insurance issues
- Addressing billing questions from patients
- Coordination with primary care provider not in facility
- Providing assistance to patients without insurance
- Providing assistance to incarcerated patients

- Gracefully addressing financial issues

Feasibility and transferability for adoption:
This needs assessment identifies areas in the patient discharge process that fourth year medical students perceive they need assistance with. It provides a roadmap to develop a curriculum that addresses these needs.

References:
1. Block, L., M. Morgan-Gouveia, W. Kelly, M. Kannarkat, K. C. Chretien and D. Cayea (2015). "Participation of Medical Students in Discharge Tasks: A Needs Assessment." J Am Geriatr Soc 63(10): 2181-2183.

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Lessons Learned from Implementation of an Asynchronous e-Learning Module in Undergraduate Medical Education

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Abstract Body:
Objective or purpose of innovation:
In 2017, emergency treatment for anaphylaxis using epinephrine injector systems ("EpiPens") was identified as a curricular need at the University of North Dakota School of Medicine and Health Sciences. Rather than creating a lecture, the instructional design team advocated for asynchronous e-learning designed using the ADDIE framework[1].

Background and/or theoretical framework and importance to the field:
Incorporating new objectives into a medical curriculum is challenging because of scheduling and time constraints[2]. Typical solutions "make room" for new lectures, yet not all learning outcomes require synchronous instruction[3]. Asynchronous e-learning delivers instruction while minimizing disruption. However, aligning outcomes with asynchronous methods requires skill, as does design, development, and ongoing evaluation.

Design: Instructional methods and materials used:
An online module was built in Adobe Captivate. Students view content and are asked questions, receiving feedback on their answers. Interactive exercises and case-based activities are included. It concludes with a 25-question exam.

Outcomes:
Students reported spending 20-25 minutes on the material. In comparison to a 1-hour lecture, over 30 cumulative hours of student time were saved per year allowing time for study and supporting work-life balance. Results of post-surveys revealed a preference for online training, but also exposed some actionable changes. Results and trends related to the experiences of over 220 students will be shared.

Feasibility and transferability for adoption:
Asynchronous e-learning minimizes student stress by allowing them to work at their own pace and to integrate learning into their schedules. It creates instructional flexibility without reorganization or compression of existing curricular events. It is not suitable for learning outcomes such as attitudes and motor skills[4]. The technical skill needed by development staff varies depending on several factors.

References:
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Measuring Learning without Tests: A Differentiated Approach to Assessment

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Abstract Body:

Objective or purpose of innovation:
To provide students with multiple pathways to demonstrate learning through application, self-reflection, active engagement, and visualization.

Background and/or theoretical framework and importance to the field:
Active engagement through multiple modalities is a proven means to improve learning and retention. While instructional delivery in medical education is shifting toward more collaborative and engaging structures, assessment strategies remain uniform and limited.

Design: Instructional methods and materials used:
In three separate courses for Year 1 medical learners, innovative assessment strategies were implemented to give students options in how to demonstrate mastery. Formative assessments were used for practice and included an empathy card game and creating a recipe for success. Summative assessments were designed in open-ended formats and paired with competency-based rubrics. Projects included student-designed music, games, videos, artwork, and public service announcements that were displayed in subsequent student exhibitions.

Outcomes:
Differentiated assessments provided learners with multiple means to cognitively process and organize understanding in meaningful ways. Giving students choices in assessments, increased engagement, motivation, and collaboration with peers. The creative outlets provided a broader window into who students were, beyond their academic achievements. Students were excited to share their projects in exhibitions and to extend their work beyond the classroom environment.

Feasibility and transferability for adoption:
Differentiated assessments provide better insight into student thinking compared to traditional, answer-based examinations. Building opportunities for choice, student voice, autonomy, and active engagement in assessment strategies increases motivation and achievement, and leads to deeper learning.

Scoring individual projects for a class size of 300 students is challenging. Finer content details would be difficult to capture in summative projects.

References:
Peter C. Ferguson, Kelly J. Caverzagie, Markku T. Nousiainen, Linda Snell. Changing the culture of medical training: An important step toward the implementation of competency-based medical education. Medical Teacher. 2017, 39(6), 599-602.

Michael J. Friendlander, Linda Andrews, Elizabeth G. Armstrong, Carol Aschenbrenner, Joseph S. Kass, Paul Ogden, Richard Schwartzstein, Thomas R. Viggiano. What can medical education learn from the neurobiology of learning? Academic Medicine. 2011, 86(4), 415-420.

Peter Harris, Farhan Bhanji, Maureen Topps, Shelley Ross, Steven Lieberman, Jason R. Frank. Evolving concepts of assessment in a competency-based world. Medical Teacher. 2017, 39(6), 603-608.

Richard E. Mayer. Applying the science of learning to medical education. Medical Education. 2010, 44, 543-549.

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Moving from Dr. Google® to Dr. Evidence

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Abstract Body:
Objective or purpose of innovation:
Medical students learn in a world where endless information is available by typing a few words into a search engine. As such medical students often struggle to critically appraise the credibility of their information sources used in self-directed learning.

Background and/or theoretical framework and importance to the field:
The Liaison Committee on Medical Education standards for accreditation advise medical school faculty to ensure their curricula include self-directed learning experiences that allow students to develop life-long learning. Through this process students must evaluate their own needs, develop questions to research and appraise the credibility of their information sources. Standard 6.3 was recently updated to include facilitator feedback on these skills[1].

Design: Instructional methods and materials used:
The role of Dr. Evidence was designed and added as a student role to problem-based learning (PBL) cases from three systems-based modules in the Foundations curriculum. During the first module, Dr. Evidence is provided faculty-generated background questions and advanced to foreground questions. By the end of the second module, students are generating their own Dr. Evidence foreground questions in groups. Faculty facilitators give students oral feedback on their work and a medical librarian provides written feedback on their Dr. Evidence worksheet, including the credibility of information sources.

Outcomes:
Doctoring students cited the role of Dr. Evidence as key to learning the skills of clinical question generation and independent appraisal of credibility of their information sources.

Feasibility and transferability for adoption:
Dr. Evidence provides a tangible and organized approach to giving each medical student oral and written feedback on their information seeking skills and credibility of information sources. Facilitators give oral feedback within the scheduled session. By utilizing a medical librarian trained in evidence-based practice, additional facilitator time is not required to provide written feedback. Limitations arise without the assistance of a trained medical librarian.

References:
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Oral health education can be successfully integrated into a 3rd year pediatric clerkship

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Abstract Body:

Objective or purpose of innovation:
This study assessed changes in knowledge, skills, and beliefs of third year medical students following completion of an oral health curriculum.

Background and/or theoretical framework and importance to the field:
To decrease the risk of caries, children should have their first dental visit by age one[1-3]. Children commonly present to primary care before their first dental visit and pediatricians are in a unique position to assess oral health and make recommendations early[1,4]. Ten percent of medical schools do not offer any instruction about oral health[5].

Design: Instructional methods and materials used:
As part of a pediatric clerkship, students completed an oral health module, and then shadowed pediatric dentists once, with students applying fluoride varnish. A pre- and post-curriculum survey captured changes in knowledge, skills, and beliefs regarding oral health.

Outcomes:
For knowledge and skills related questions, there was an improvement ($p<0.05$) following the curriculum. For beliefs, although not significant, there was a more agreeable response following the curriculum. 94% and 92% of students believed (strongly agree /agree) that the module and dental clinic experience improved their knowledge.

Feasibility and transferability for adoption:
Although other schools have integrated oral health in their programs[6-8], it may not be possible for all medical schools. Our study showed that integration of an oral health curriculum into a busy clerkship is possible in a short period of time and is received positively by students, leading to increased knowledge and skills. While at baseline students thought that oral health education was important., the curriculum engendered greater belief that oral health should be integrated into medical education.

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Patient Safety Detectives: An Interprofessional Approach to Teaching Students About Root Cause Analysis

Submission Type: Innovations Abstract
Accepted as: Poster

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Abstract Body:

Objective or purpose of innovation:
The objectives of this activity are to provide students with an opportunity to explore how medical errors occur, the process for identifying systems issues contributing to an event, and the value of interprofessional perspectives in improving patient safety.

Background and/or theoretical framework and importance to the field:
Interprofessional collaboration is increasingly recognized by licensing boards as a critical skill for both pharmacy and medical students[1,2]. This activity utilizes an innovative approach to learning patient safety, combining an online curriculum with face-to-face interprofessional education focusing on patient safety and incorporating a mock root cause analysis (RCA)[3-5].

Design: Instructional methods and materials used:
Third-year medical students and pharmacy students (~240 total) completed the following:
- Pre-module assessment: Encompassing interprofessional socialization (6) and attitudes towards patient safety (7)
- Online module (30 minutes): Addressed patient safety concepts and interprofessional responsibilities in the context of a medical error
- Face-to-face session (90 minutes): Short video and debrief about the importance of health professional participation in patient safety efforts, followed by mock RCA in interprofessional groups of ~15 students
- Post-module assessment: Same as first assessment plus knowledge check and student feedback

Outcomes:
Each knowledge check question was answered correctly by the majority of students (84-99%). The majority of students agreed that there was value in including other health professions in the activity (92%), the face-to-face session (88%), and the online module (73%). There were no significant differences pre- and post- for interprofessional and patient safety attitudes items, likely due to ceiling effect.

Feasibility and transferability for adoption:
Firsthand facilitator experience with RCA and use of a real-world case were strengths. An area for improvement would be to expand to include other disciplines.

References:
1. Liaison Committee for Medical Education. Functions and structure of a medical school 2019-2020. http://lcme.org/wp-content/uploads/filebase/standards/2019-20_Functions-and-Structure_2018-09-26.docx. Accessed October 9, 2019.

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Pediatrics Physical Exam Experience in Pre Clerkship Years; a Partnership with Local Childcare Center

Submission Type: Innovations Abstract
Accepted as: Poster

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Abstract Body:
Objective or purpose of innovation:
Provide pre-clerkship medical students with experience practicing pediatric physical exam skills.

Background and/or theoretical framework and importance to the field:
In one multi-institutional study, 40% of students reported inadequate preparation for pediatric physical examination skills[1]. To address this gap, we partnered with a daycare to enhance preclerkship pediatric physical exam experiences.

Design: Instructional methods and materials used:
We partnered with our affiliate childcare center to engage groups of M2 students (N 130) in a half day experience. Students rotate between different age groups (0-6yrs). Student preparation included video resources demonstrating non invasive exams and developmental milestones. Students practiced communication skills, developmental assessments, and non-invasive physical exam maneuvers. Faculty and senior medical students were present to coach students. Students were given pre-and-post surveys rating comfort performing a general and focused physical exam and assessing vital signs and development (5 point anchored Likert scale 1 = not at all comfortable, 5 = extremely comfortable). Data was analyzed using Chi-Square comparing perceptions before and after the experience.

Outcomes:
We found significant improvement in student comfort performing the measured aspects of examination. The average rating of comfort performing a pediatric physical exam increased from an average rating of 2.7 prior to the experience to 3.67 after the experience ($p < .05$). Overall, students enjoyed the experience, with an average ranking of 4.24.

Feasibility and transferability for adoption:
Our results show that practice is successful in enhancing comfort with pediatric examination. The opportunity to engage with children or various ages enables students to enter Pediatrics with prior exposure in examining children. Feedback suggests additional in-depth preparation prior to the experience, and having more pediatric faculty available. Future studies could investigate if increased student comfort is sustained prior to the clerkship. Implementing this type of program fosters comfort with pediatric physical exam skills. Limitations include implementation at institutions without child care facilities.

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.

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Reflections of an Evolving Local Innovations in Healthcare Education Research Conference

Submission Type: Innovations Abstract
Accepted as: Poster

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Abstract Body:
Objective or purpose of innovation:
The purpose of this study is to examine the six-year changes of a locally-hosted annual conference in healthcare education.

Background and/or theoretical framework and importance to the field:
Over a six-year period, a locally-hosted annual healthcare education conference at a Midwestern private medical school has grown in number of participants and expanded its presentation platforms with limited funding in order to reach the level of a regional conference.[1] The use of external high-caliber plenary speakers, evolving multi-platform presentation formats,[2] digital conference programs and evaluations,[3] and traditional cold-calling has resulted in a high-quality interprofessional healthcare education conference.

Design: Instructional methods and materials used:
Each year in April from 2014 to 2019, faculty, staff, residents, medical and graduate students participated in a local, single day innovations in healthcare education research conference. Presentation platforms have included a plenary session, traditional workshops, 10-minute oral presentations, and posters, and in 2018-2019 included ignite sessions and speed posters.

Outcomes:
Fundamental program changes over the six years occurred due to shifts in technology which include broadcasting the plenary session in real-time to regional campuses, digitizing the conference program, and using quick response (QR) codes to access presentation files and evaluation forms. Additional program changes due to institutional growth from a medical school to a healthcare university included committee members and conference participants from the new school of pharmacy and regional medical campuses. External plenary speakers have often been utilized to drive institutional change.

Feasibility and transferability for adoption:
Conference participation has tripled since 2014 and has included members from regional schools in Illinois and Minnesota. Limitations include having too many sessions for a single-day conference, but not enough for two full days.

References:
1. Medical College of Wisconsin. (2019, April 25). 2019 Innovations in Healthcare Education Research Conference. Retrieved from https://www.mcw.edu/education/innovations-in-healthcare-education-research/2019-iher-conference

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Review of the Yankton Longitudinal Integrated Clerkship

Submission Type: Innovations Abstract
Accepted as: Oral Abstract Presentation

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Abstract Body:

Objective or purpose of innovation:

Review results of 18 years' experience of a Longitudinal Integrated Clerkship (LIC)

Background and/or theoretical framework and importance to the field:

There has been a call to change the training of medical students in the primary clinical year. The University of South Dakota Sanford School of Medicine is a community based medical school with three clinical campuses. Students self-select their clinical sites at either Sioux Falls, Rapid City or Yankton. The Yankton Ambulatory Program is the longest running longitudinal integrated clerkship in the USA that includes the entire clinical year, starting in 1991. It is a yearlong program that is integrated across 7 disciplines, is ambulatory based, stresses continuity and problem based learning. Due to Yankton's LIC successes, in 2013, all clinical campuses incorporated the LIC model.

Design: Instructional methods and materials used:

We have surveyed students, and reviewed outcomes in the following areas which will be reviewed with the audience:

1) Academic Performance: GPA, Knowledge retention, Step 2 scores with comparison to the traditional block clerkship (BC) students
2) Specialty choice for graduates
3) Percentage of students that return to Yankton for clinical practice
4) Empathy and burnout
5) Benefits to faculty
6) Student/faculty dynamics
7) Student value to patients, physicians, the community and the hospital system

Outcomes:

We will review benefits and challenges of a longitudinal integrated clerkship and student outcomes.

Feasibility and transferability for adoption:

LIC students Step 2 scores compared to Step 1 increased more than BC students. LIC students had increased retention of knowledge, less burnout and maintained empathy across the clinical year. Students perceive their value to patients, physicians, the community and hospital systems.

References:

Hansen, L. A., et al. (1992). University of South Dakota Sanford School of Medicine's Third-year Program of Integrated Clerkships in Ambulatory-care settings. Academic Medicine, 67(12), 817-9.

Irby D.M., Cooke M., O'Brien B.C. Calls for Reform of Medical Education by the Carnegie Foundation for the Advancement of Teaching: 1910 and 2010. Academic Medicine, 2010 Feb; 85(2): 220-227

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Students as Innovators: A New Role in Problem-based Learning

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Abstract Body:
Objective or purpose of innovation:
The Carle Illinois College of Medicine curriculum integrates engineering with biomedical sciences. We sought to integrate engineering early and enhance the students' ability to generate ideas through the addition of an innovator role in our Problem-Based learning (PBL) sessions. The objective of this study is to describe the innovator role and its outcomes.

Background and/or theoretical framework and importance to the field:
21st century medical students must be prepared to innovate and introduce improvements to the field[1]. The Carle Illinois College of Medicine seeks to develop a new generation of physician-innovators that can apply quantitative skills and teamwork to impact health with innovative solutions.

Design: Instructional methods and materials used:
Each PBL session is comprised of eight students and one facilitator who meet three times per week for a total of 6 hours. Students rotate through eight roles: searcher, scribe, reader, synthesizer, inquisitor, feeder leader and innovator. The innovator is responsible for working with the group to identify clinical need(s) and generate new or improved ideas to address those needs.

Outcomes:
Examples of ideas generated include: an application that combines a patient interface and family network to track patient's health, a device that uses a gauge sensor to measure jugular vein distension, and a new inhaler device to diminish variable dosing. The innovator role is a unique experience for students to explore their curiosity and present their ideas weekly during the PBL session.

Feasibility and transferability for adoption:
The introduction of the innovator role sparked students' curiosity and group discussion about health care solutions and the value of engineering innovation in medicine. One limitation is that the innovator role may consume session time normally devoted towards clinical or foundational science discussions.

References:
1. Brazile T; Hostetter Shoop G; McDonough CM; Van Citters DW. Promoting innovation: Enhancing transdisciplinary opportunities for medical and engineering students. Medical Teacher vol: 40, issue 12, pp. 1264-1274, 2018.

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Teaching Gender Inclusion in the Pre-Clerkship Curriculum

Submission Type: Innovations Abstract
Accepted as: Oral Abstract Presentation

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Abstract Body:

Objective or purpose of innovation:
The goal of this project is to create a more gender-inclusive clinical skills curriculum for pre-clerkship medical students.

Background and/or theoretical framework and importance to the field:
The 2015 US Transgender Survey documented that 33% of transgender individuals reported negative experiences in a healthcare setting in the preceding year[1]. The AAMC has outlined steps to promote curricular changes to improve health for LGBTQ+ individuals[2], but the development of gender-inclusive curricula is still in its infancy[3].

Design: Instructional methods and materials used:
Faculty and staff worked iteratively to make our pre-clerkship clinical skills curriculum more gender-inclusive. We first introduced a formative standardized patient (SP) case for second year students in which a gender non-binary (GNB) patient experiences complications of hormonal treatment. We also modified our foundational communication skills training and adjusted student-facing demographic information for all SPs. Input from our transgender and GNB SPs has been essential.

Outcomes:
Students learn gender-inclusive greetings such as introducing themselves with their pronouns and asking patients about their affirmed names and pronouns. All SP face sheets include gender, sex assigned at birth, pronouns, legal name and affirmed name. For the sexual history, students learn a gender-inclusive alternative to, "Do you have sex with men, women or both?" in the form of, "What are the genders of your partners?" We now include transgender and GNB SPs and cases throughout the pre-clerkship clinical skills curriculum.

Feasibility and transferability for adoption:
The input of transgender and GNB individuals has resulted in cases that are realistic and avoid stereotypes. Faculty and students are becoming more attuned to gender diversity. There are, however, limited data about how broad populations of patients respond when students use gender-inclusive language.

References:
1. James SE, Herman JL, Rankin S, Keisling M, Mottet L, Anafi M. Executive Summary of the Report of the 2015 U.S. Transgender Survey. Washington, DC: National Center for Transgender Equality; 2016.
2. Hollenbach AD, Eckstrand KL, Dreger AD. Implementing Curricular and Institutional Climate Changes to Improve Health Care for Individuals Who Are LGBT, Gender Nonconforming, or Born With DSD: A Resource for Medical Educators. Washington, DC: Association of American Medical Colleges; 2014.
3. Dubin SN, Nolan IT, Streed CG, Greene RE, Radix AE, Morrison SD. Transgender health care: improving medical students' and residents' training and awareness. Adv Med Educ Pract. 2018;9:377-91.

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The E-Board: Online-based whiteboard template for Problem Based Learning in Medical Education

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Abstract Body:

Objective or purpose of innovation:
An electronic whiteboard (E-Board) was created online to allow students to engage in the same components of PBL online while addressing the lack of mobility of physical whiteboards and utilize the individual technologies and resources students have.

Background and/or theoretical framework and importance to the field:
Medical school curricula based on problem-based learning (PBL) are prevalent[1]. Traditional PBL procedures involve a facilitator guiding students through a case over several sessions. The discussion revolves around a physical whiteboard divided into several categories (Information, Hypotheses, Action Items, Learning Issues), serving to contextualize the case information and ideas generated in the discussion from the session. During this discussion, all students are assigned roles, including leader, scribe, and searcher[2,3].

Design: Instructional methods and materials used:
An E-Board template was constructed on Google Sheets for students to use during PBL. A diagnosis-rationale column and diagnosis problem list comparison table were added to further discussion and evaluation of the PBL case. After utilizing this online method for several months, members of a PBL group were surveyed on how the addition of the E-Board altered the PBL process for them. All group members (6 students and 1 facilitator) responded to the survey.

Outcomes:
Students perceived several benefits from using the E-Board: PBL became more efficient and content was more accessible. Students did not report a change in their personal learning. However, some students and the facilitator thought the possibility of distractions was greater because the E-Board required more personal screens to be opened.

Feasibility and transferability for adoption:
These findings offer insight into how technology can be integrated into the process of PBL to make it more efficient and accessible. The findings also raise caution about how technology may detract from PBL by distracting to the group.

References:
1. Neville AJ. (2008). Problem-Based Learning and Medical Education Forty Years On - A Review of Its Effects on Knowledge and Clinical Performance. Medical Principles and Practice, 18:1-9.
2. Davis MH, Harden RM. (1999). (AMEE Medical Education Guide No. 15: Problem Based Learning – A Practical Guide. Medical Teacher, 21(2), 130-140.
3. Hmelo-Silver, C. E. (2004). Problem-Based Learning: What and How Do Students Learn? Educational Psychology Review, 16(3), 235–266.

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The Wild West: A Clinical Competency Committee in the Final Stage

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Abstract Body:

Objective or purpose of innovation:
The fourth year of medical school has been named the "lost year" or the "wild west" for the inherent lack of follow up on student progress. Learners are consumed with residency applications and interviews, and traditionally have few required rotations. As a method to better sense the pulse of our students, our school has developed a Pillar 3 Competency Committee. The goal of this committee is to review the academic performance, progression, and professionalism for all of our graduating class.

Background and/or theoretical framework and importance to the field:
In many institutions, including our own, we have close surveillance of our students in the pre-clinical and first clinical year. For most students, they are able to successfully navigate this stage of training. However, those who have been previously identified as "at risk" need to have continued support and monitoring to ensure successful completion and transition to residency.

Design: Instructional methods and materials used:
The competency committee meets quarterly, reviewing every student twice throughout their final phase. The information that is reviewed includes grades (both narrative and numeric), patient logs, professionalism comments, and feedback from advisors. Each Clerkship Director is assigned a student, and it is their responsibility to review the data presented to the committee and follow up with students as necessary. Following each meeting, students are provided a summary of comments regarding their progress.

Outcomes:
This change in oversight in Pillar 3 has been well received by both students and faculty based on comments and feedback provided.

Feasibility and transferability for adoption:
Significant strengths of this innovation are that we have better communication between students and faculty, have continued monitoring of "at-risk" students, and provide affirmation to those that are progressing appropriately. Weaknesses of our committee include evolving expectations, faculty time commitment, and difficulty with compiling student reports.

References:
Clinical Competency Committees - acgme.org. (n.d.). Retrieved from
https://www.acgme.org/Portals/0/ACGMEClinicalCompetencyCommitteeGuidebook.pdf.

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Toward a comprehensive-but-efficient peer observation instrument for medical and health sciences faculty

Submission Type: Innovations Abstract
Accepted as: Poster

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Abstract Body:

Objective or purpose of innovation:

The Occupational Therapy (OT) Department at the University of North Dakota (UND) School of Medicine and Health Sciences (SMHS) identified a need for an efficient, yet descriptive, instrument for peer teaching evaluations. An ideal tool would be easy to complete in-situ. Qualitative and quantitative ratings would guide self-reflection and constructive dialogues. Measurements would translate to annual evaluations and be congruent with tenure and promotion benchmarks.

Background and/or theoretical framework and importance to the field:

Peer observations of teaching are important for quality improvement and professional development[1]. Observees benefit from the entire process, while observers reflect on their own teaching as they observe their peers, resulting in higher quality education[2]. To have value, peer observations must include pre- and post-evaluation meetings[3]. Time- and resource-management demand an efficient process[4], but effective peer observations must yield descriptive, specific, sensitive, directed, timely, and selective feedback[2].

Design: Instructional methods and materials used:

An instructional designer, OT professor and reference librarian reviewed literature to assess existing instruments. Findings were used to construct an instrument comprised of categories, subtopics, and criteria, with consideration for workplace-specific evaluation and mission-related language. A descriptive rubric format satisfies the competing requirements of detailed feedback and efficiency of use. Concise qualitative components allow for two-way reflection without repetition.

Outcomes:

The peer observation instrument is undergoing pilot testing during the 2019-2020 academic year. Preliminary results, validation plans, and stakeholder feedback will be shared.

Feasibility and transferability for adoption:

Strengths: This evidence-based instrument provides for quantitative and descriptive scoring (and qualitative reflection) on teaching and faculty-student interaction in one class session. Limitations: it is not yet validated and while it was written with transferability in mind, it has not yet been tested beyond the OT Department.

References:

1. McMahon T. Using observation of teaching to improve quality: finding your way through the muddle of competing conceptions, confusion of practice and mutually exclusive intentions. Teaching in Higher Education. 2007;12(4):499-511.

2. Sullivan PB, Buckle A, Nicky G, Atkinson S. Peer observation of teaching as a faculty development tool. BMC Medical Education. 2012;12(26).

3. Bernstein D. Peer review and evaluation of the intellectual work of teaching. Change: The Magazine of Higher Learning. 2008;40(2):45-51

4. Thomas S, Chie QT, Abraham M, Raj SJ, Beh LS. A qualitative review of literature of peer review of teaching in higher education: an application of the SWOT framework. Review of Educational Research. 2014;84(1):112-159.

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Use of a Discharge Observation Tool in Medicine Sub-Internship

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Abstract Body:

Objective or purpose of innovation:
To demonstrate the utility of a discharge observation tool initially used in medicine clerkship to assess fourth year student's readiness for discharging patients in internship[1].

Background and/or theoretical framework and importance to the field:
Discharging a hospitalized patient is an important activity that interns are expected to perform during residency. Despite this, only 56% of medical students review discharge instructions with patients and over 95% desire additional training[2]. We used a discharge observation tool initially used in medicine clerkships to assess fourth year student's performance when discharging patients[1].

Design: Instructional methods and materials used:
As a part of the fourth-year internal medicine sub-internship discharge curriculum, medical students were required have a preceptor provide real-time feedback while discharging a patient. The discharge observation tool was used to provide feedback to 82 medical students.

Outcomes:
The percentage of students rated as performing above the expected level include the following:
92% -Patient communication: including appropriate use of medical terminology, teach-back method, responsiveness to non-verbal cues and addressing patient's concerns
82% Medication Counseling: including counseling about new medications, changes to prior medications and side effects of medications
87% Team Communication: including the involvement of other members of the healthcare team (e.g; social worker, physical and occupational therapists and pharmacists), communication with other physicians, and explaining the follow up plan after discharge.
Areas for improvement most often commented on were communicating at a level commensurate with patient's education, lack of use of teach back method to review discharge instructions and need for more use of open-ended questions when interacting with patients.

Feasibility and transferability for adoption:
This validated tool provides students with direct feedback to help improve their readiness to discharge patients during internship. This is an important step to help students meet the patient discharge related entrusbable professional activities. The tool did not discriminate between subcategories although evaluators could provide written feedback.

References:
1. Lyons, M. D., D. B. Miles, A. M. Davis, M. B. Saathoff and A. T. Pincavage (2016). "Preventing Breakdowns in Communication: Teaching Patient-Centered Posthospital Care Transitions to Medical Students." MedEdPORTAL 12: 10435.
2. Block, L., M. Morgan-Gouveia, W. Kelly, M. Kannarkat, K. C. Chretien and D. Cayea (2015). "Participation of Medical Students in Discharge Tasks: A Needs Assessment." J Am Geriatr Soc 63(10): 2181-2183.

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Using a Quick Response (QR) Code Reader System to Deliver Feedback During a Pediatric Clerkship

Submission Type: Innovations Abstract
Accepted as: Poster

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Abstract Body:
Objective or purpose of innovation:
To determine the impact of a QR code reader system containing specific feedback prompts on the delivery of feedback from faculty.

Background and/or theoretical framework and importance to the field:
Medical students report not receiving consistent, actionable feedback during clinical clerkships [1,2]. Our students qualitatively reported less regular and specific feedback during outpatient rotations compared to inpatient on clerkship evaluations. We developed a system for collecting real-time feedback using QR mobile technology that prompted specific responses and compared it to the current less specific paper format.

Design: Instructional methods and materials used:
58 third year students were voluntarily surveyed regarding the quantity and quality of feedback received during the outpatient rotation. Students were divided into 2 groups. The "Paper group" (n=14) completed the survey prior to the pilot of the QR system, and the "QR group" (n=21) completed the survey after the launch of the new system.

Outcomes:
The QR group reported receiving more frequent feedback (90%) compared to the Paper group (65%). The QR group also reported receiving more feedback related to clinical skills (QR group: 81%; Paper: 57%), a higher rate of actionable feedback (QR group: 85%; Paper: 71%) as well as more feedback to improve their performance (QR group: 58%; Paper: 4%). Although none of these differences were statistically significant, the difference in perceived frequency of feedback between the groups did approach significance (t-test; $P = 0.06$).

Feasibility and transferability for adoption:
The QR code system enhanced feedback by presenting a menu of specific skills which appeared to better prompt faculty as compared to the system which had general feedback prompts. While no significant differences between the groups were observed, the sample size used was a small convenience sample and did not reach reasonable statistical power.

References:
1. Bing-You R et. al. The Art (and Artifice) of Seeking Feedback: Clerkship Students' Approaches in Asking for Feedback. Academic Medicine 2018 Aug;93(8):1218-1226. doi: 10.1097/ACM.0000000000002256.

2. Bowen L, Marshall M, Murdoch-Eaton D. Medical Student Pereceptions of Feedback and Feedback Behaviors Within the Context of the "Educational Alliance." Academic Medicine 2017 Sep;92(9):1303-1312. doi: 10.1097/ACM.0000000000001632.

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Validity evidence in examining student evaluation of courses: Qualitative coding and triangulation

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Abstract Body:

Objective or purpose of innovation:
Although student evaluation of courses is common in medical schools, limited guidance is available to analyze feedback efficiently. We established a process for distilling narrative feedback into quantitative data to identify actions for course improvement.

Background and/or theoretical framework and importance to the field:
Institutions use various methods to evaluate course effectiveness, including quantitative measures and open-ended questions. While analyzing quantitative data is relatively straightforward, these data may not provide details of the strengths and weaknesses of a given course. In contrast, open-ended questions provide insights into specific course themes, but analyzing qualitative data may be controversial without evidence of credibility and trustworthiness[1]. A rigorous process is needed to ensure validity and trustworthiness of qualitative coding. In addition, triangulation combining qualitative and quantitative data sources will confirm findings to guide course improvement[2].

Design: Instructional methods and materials used:
Using student evaluations of a foundational sciences course, we used a thematic inductive coding approach to generate a codebook and identify themes. These data were triangulated with quantitative data and will help guide course changes.

Outcomes:
The qualitative coding process was perceived as useful and efficient, demonstrating evidence of inter-coder reliability. Concerns were identified regarding specific course components and instructional techniques. Triangulation with quantitative data corroborated these results, adding validity evidence to our findings.

Feasibility and transferability for adoption:
The strengths of this approach include the increased validity and trustworthiness of the interpretation of narrative feedback. Two limitations of this approach include the requirement for a representative sample of students willing to provide thoughtful feedback and its reliance on student perspectives alone as a data source. Results from this approach must be triangulated with other data (e.g., student performance, faculty perspectives) to ensure that appropriate conclusions about course effectiveness are made.

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2 Creswell, J. W. (2009). Research design: qualitative, quantitative, and mixed methods approaches. Los Angeles: Sage.

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Visualizing Speech Patterns in Problem-Based Learning Sessions

Submission Type: Innovations Abstract
Accepted as: Poster

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Abstract Body:

Objective or purpose of innovation:
The purpose of this innovation is to create images that summarize speech patterns between students and facilitators during Problem-Based Learning (PBL) sessions. These visualizations are intended to be used by facilitators to reflect on cases to improve facilitation and learning[1].

Background and/or theoretical framework and importance to the field:
PBL is a popular approach to medical education, and it forms the core of the curriculum at Carle Illinois College of Medicine. Much of the initial research on PBL compared outcomes to traditional approaches (e.g., lecture-based curricula). More recent research has explored the process of PBL and has highlighted the importance of group dynamics and the role of the facilitator[2]. This work has used methods such as case study and microanalysis[3]. Although these methods generate useful research insights, the analyses are time-consuming and therefore do not quickly generate insights that can be used to impact current instruction.

Design: Instructional methods and materials used:
We added an audio recording device to ongoing PBL sessions. The device had two microphones, one for the group and one for the facilitator.

Outcomes:
We collected 62 recordings from 31 PBL sessions over 6 weeks. These recordings are currently being used to develop an automated process for creating images[4].

Feasibility and transferability for adoption:
This innovation offers a way to view temporal patterns in speech between facilitators and students, which are otherwise difficult to track over a two-hour session. These images can be used to reflect on and compare speech patterns.

In its current format, the innovation shows student speech at the group level rather than the individual student level. Also, the contents of the speech are not available in this format. In the next stage of the project we will investigate how useful the images are for supporting facilitators.

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Where's the Pain? Utilizing Curriculum Mapping to Drive the Development of a Biopsychosocial Pain and Opioid Use Curriculum for Medical Students

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Abstract Body:

Objective or purpose of innovation:
Mayo Clinic Alix School of Medicine identified pain as a top five societal problem for LCME accreditation. The Pain and Opioid Curriculum Subcommittee was utilized to identify where in the curriculum pain and opioid content was taught and assessed throughout the four year medical school.

Background and/or theoretical framework and importance to the field:
To face the current opioid epidemic, medical schools need to educate and train future physicians to provide appropriate biopsychosocial care for patients with pain and problematic opioid use. A recent systematic review of 383 medical schools[1] found minimal instructional time and limited breadth of content dedicated to pain.

Design: Instructional methods and materials used:
A curriculum mapping analysis of course content was performed to identify gaps in existing curriculum. Once the curriculum was mapped, a comparison was completed utilizing the International Association for the Study of Pain Core Competences for Pain Management[2] and the Arizona Department of Health Services Pain and Addiction Curriculum[3]. A survey was sent to graduating medical students in 2018 and 2019 to gain insight regarding student's satisfaction with current curriculum, perceived knowledge, and confidence gaps.

Outcomes:
Curriculum is being integrated vertically and horizontally to provide a longitudinal learning experience in biopsychosocial aspects of pain and opioid use. We mapped current curriculum and forecast increasing curriculum by 25% yearly for next 4-5 years. To date, we have increased content by 30%, expanding didactic and experiential learning opportunities. Survey responses indicated perceived knowledge and confidence gaps in biopsychosocial evaluation and treatment of acute and chronic pain, pediatric pain, and opioid use disorder as well as ratings of satisfaction with current curriculum.

Feasibility and transferability for adoption:
The utilization of two external organization curriculum outlines enhanced the curriculum mapping experience and validated the need for additional focal topics to be created.

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Win, Win, Win: Engaging and rewarding residents to provide individualized feedback to medical students on formative knowledge assessments

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Abstract Body:
Objective or purpose of innovation:
The Cleveland Clinic Lerner College of Medicine (CCLCM) recruits, prepares, and rewards Graduate Medical Education trainees (residents and fellows) to rate and provide feedback on competency-based essay questions. This innovation addresses limited faculty resources and provides students with near-peer feedback while recognizing trainees for their service[2].

Background and/or theoretical framework and importance to the field:
CCLCM utilizes weekly concept appraisal questions (CAPPs), throughout Years 1-2. Medical students use CAPP feedback to document their application and integration of medical knowledge for their promotion portfolios[1]. By encouraging trainees to engage in the feedback process, we can reduce the pressure of increasing faculty demands[3], while providing students with timely feedback.

Design: Instructional methods and materials used:
We recruit trainees recommended by course directors, then provide them with training on CCLCM's assessment philosophy, performance expectations, and formative feedback examples. Senior faculty review a subset of trainee responses to ensure their feedback met performance expectations. Following review of two CAPPs (approx. 16 hours), we reward trainees by recommending them for academic appointment of "Clinical Instructor." This CQI project was deemed exempt.

Outcomes:
During 2014-2019, 127 residents served as CAPP reviewers, with 74 (58%) receiving an academic appointment of clinical instructor. We observed residents, especially our alumni, could provide targeted feedback to students with minimal faculty oversight. Resident participation increased over time, requiring fewer full-time faculty to review CAPPs (e.g., 53 faculty in 2014 to 23 in 2019).

Feasibility and transferability for adoption:
With the expected rate of trainee turn-over a continuous mentored approach is required. This scope of work is unavailable to trainees with a J-1 Visa. This program reduces pressure on full-time faculty, engages and rewards GME residents (including CCLCM alumni), as well as provides essential formative feedback to medical students.

References:
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2 McBride, J. M., & Drake, R. L. (2011). Rewarding the resident teacher. Anatomical Sciences Education, 4(4), 227-230.
3 Ramani, S., Mann, K., Taylor, D., & Thampy, H. (2016). Residents as teachers: Near peer learning in clinical work settings: AMEE Guide No. 106. Medical teacher, 38(7), 642-655.

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Research Abstracts

"So You Took an Oath": First-Year Medical Students' Reflections on Professionalism Virtues

Authors:
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Abstract Body:

Research Statement/Research Question:
This study analyzed first-year medical students' ability to reflect on core professional virtues following a small group session on physician oaths.

Background and relevance of the study:
A paramount component of medical education is the teaching of medical professionalism.[1] Early integration of professionalism into curriculum is most important today, as tensions between professionalism and corporate policy grow.[2] Therefore, it's often the objective to maximize medical students' comprehension, retention, and commitment to the virtues of professionalism.[1,2] However, the ability of first-year medical students to engage with and reflect on professionalism virtues remains unclear.

Design and Methods:
First-year medical students (n=117) consented to their personal statements and reflective essays to be used in this study, which were de-identified and matched using a unique identifier. Upon completion of the "So You Took an Oath" session, students completed written reflections on physician oaths in which they reflected upon the notion of professionalism and moral/ethical commitments entailed in viewing medicine as a profession, and compared their personal statements to the essential characteristics of a medical professional. Personal statements and critical reflections were uploaded to Dedoose 8.2 for comparative thematic analysis.

Results:
While many personal statements were devoid of traditional professionalism characteristics, students often discussed access to healthcare, socioeconomic determinants of health, and service. The most common characteristics discussed in the reflections were professional competence/knowledge, which often co-occurred with compassion. Students frequently confused characteristics like compassion and empathy, and communication and listening. While most students had thoughtful discussions of professionalism, many lacked the ability to value the professionalism characteristics in their personal statements.
Many students discussed shadowing experiences with clinicians, but failed to reflect on the oaths and honoring one's teacher.

Conclusions:
The "So You Took an Oath" reflections demonstrated first-year medical students' ability to engage with traditional professionalism characteristics early on, but highlighted low reflective ability and confusion about the meaning of essential professionalism virtues.

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A novel video intervention to improve senior medical students' performance on outpatient telephone encounters

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Abstract Body:

Research Statement/Research Question:
Which skills are important for physicians when addressing outpatient telephone calls (OTCs)? Can a video intervention improve medical student skills in addressing OTCs?

Background and relevance of the study:
First-year residents are often responsible for OTCs with little prior training[1–4] and few, outdated guidelines[5,6].

Design and Methods:
We utilized a two-round conventional Delphi technique to determine consensus on which skills are important when addressing OTCs. We then created an instructional video focused on these skills. To determine the video's effectiveness, senior medical students viewed the video in a randomized controlled fashion divided into two groups: Intervention and Control. Students were assessed pre- and post-intervention on their ability to manage OTCs based on a simulated OTC with a standardized patient who assessed them on a pre-defined expert-validated rubric. The primary outcome was the difference in improvement between Control and Intervention groups, using a MANOVA for significance and Cohen's d for effect size.

Results:
4/7 faculty (57%) and 8/11 residents (73%) in four specialties completed the Delphi. 34 skills were deemed important; 18 achieved high consensus (>=80% agreement [7]); 16 approached consensus (50-79% agreement [7]). These skills were incorporated into the 8-minute video.
72 students completed pre- and post-intervention assessments (Control, n=41; Intervention, n=31). The mean score (SD) in Control improved from 62.3% (14.3%) to 66.6% (25.0%) (4.3% improvement). The score in Intervention improved from 60.7% (15.2%) to 72.9% (20.4%) (12.2% improvement). The between-group difference was non-significant. However, the effect size measured by Cohen's d was 0.55, which is greater than the threshold for an educational intervention to be considered effective (>0.33) [8].

Conclusions:
This project filled a key gap in OTCs for medical students transitioning to residency. The needs assessment Delphi process and curriculum development can be reproduced for other pressing gaps in this important educational transition.

References:
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A Pilot Program in Patient Safety Education Involving Medical Students as Unannounced Observers of Preceptor Hand-Hygiene Practices

Submission Type: Research Abstract
Accepted as: Oral Abstract Presentation

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Abstract Body:

Research Statement/Research Question:
We evaluated the feasibility of medical students serving as unannounced observers of hand-hygiene practices. We quantified preceptor adherence to hand-hygiene guidelines as part of a pilot program in patient safety education.

Background and relevance of the study:
Adherence to hand-hygiene guidelines is important in reducing the spread of transmissible disease[1,2]. Novel programs are needed to teach medical students about patient safety and to demonstrate this entrustable professional activity (EPA #13)[3,4,5,6,7].

Design and Methods:
We launched a program to integrate patient safety education into medical student clinical responsibilities as part of AAMC's Core EPA pilot. Between 2016-2018, medical students were invited to document patient encounters with preceptors, noting hand-hygiene behavior performed before and/or after encounters. Physician gender, specialty, level (attending/resident); setting (inpatient/outpatient); and time of year were recorded. Chi-Square analysis was used to determine differences across categories. Logistic regression was used to predict hand-hygiene performance. Student perceptions of the pilot are also reported.

Results:
67 student participants documented 715 patient encounters and observed 94 preceptors. Pre-encounter hand-hygiene was performed at a higher rate (81.5%) than post-encounter (71.6%). Preceptors performed hand-hygiene before and after a patient encounter 62.4% of the time, and 5.6% of encounters involved no hand-hygiene. There was a significant difference in hand-hygiene performance by specialty ($p < 0.05$). Multivariate logistic regression revealed that time of year (spring > winter > fall, $p=0.016$), specialty (surgical > non-surgical specialties, $p=0.017$), setting (inpatient > outpatient, $p=0.009$), and supervisor level (resident > attending, $p=0.018$) are independent predictors of performing hand-hygiene before and after a patient encounter. Amongst student participants, 72% recommended expansion of the pilot.

Conclusions:

We successfully incorporated hand-hygiene education into medical students' clinical experience. Our findings suggest several factors that may predict likelihood of performing hand-hygiene. Future research is needed to determine if observing preceptor hand-hygiene behaviors contributes to student habits that are sustainable throughout training.

References:

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Adverse childhood events in medical students: Investigating factors that promote resilience

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Abstract Body:
Research Statement/Research Question:
To identify the proportion of medical students that have 4+ ACEs and determine protective factors that promote resilience in these students.

Background and relevance of the study:
The original ACEs study[1] described the correlation between adverse childhood experiences (ACEs) and health risk behaviors in adulthood. A recent meta-analysis[2] showed that people with 4+ ACEs had markedly increased odds ratios of developing behaviors that perpetuate the cycles of abuse and poverty. For instance, those with 4+ ACEs were shown to have an almost 40-fold increase in suicide attempts and 10-fold increase in problematic drug use. . The purpose of this study is to address medical students, a population that has successfully completed higher education and presumably does not have a significant criminal or drug abuse history.

Design and Methods:
We gave the ACE questionnaire to all medical students at a single institution. If the student was determined to have 4+ ACEs, they were given the option to submit their email address to schedule a follow-up interview in order to determine protective factors that helped build resilience in their life. One-on-one interviews were then recorded and transcribed. Survey data was analyzed using STATA[3] and interviews were coded for protective factors and resilience building.

Results:
Of 55 participants, 18 had zero ACEs, 12 had one ACE, 4 had two ACEs, 6 had three ACEs, and 15 had 4+ ACEs. The ACE score mean was 2.07 (1.48-2.66, 95%). Three different ACEs (sexual abuse [3 responses], poverty/drug use [5 responses], and domestic violence [3 responses]) were each only present in students with 4+ ACEs overall. 4 students were willing to interview and all had the protective factors of "non-parental support and love" and a "consistent role model".

Conclusions:
Medical students do not have a significantly higher ACE score mean (2.07 [1.48-2.66,95%]) compared to the total population (1.57, [1.55-1.59, 95%]). More conclusions to follow.

References:
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Analysis of the Impact of Medical Student Traits on Self-Esteem between Three-Year and Four-Year Medical Degree Programs

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Abstract Body:

Research Statement/Research Question:
The purpose of this study is to analyze the impact of medical student personality, resilience, affect, and burnout on self-esteem as moderated by three-year and four-year medical degree programs.

Background and relevance of the study:
Emotionally intelligent medical students have adequate levels of self-esteem which gives them the confidence in their self-worth and abilities to succeed in medical school.[1] Intrinsic traits such as personality, resilience, and affect (emotions) as well as burnout will impact self-esteem.[2] Resilient medical students can endure through more challenging episodes of time[3] when self-esteem levels falter.

Design and Methods:
In 2017-18, 205/500 M-1/M-2 medical students voluntarily completed self-reported electronic surveys using the following validated instruments: Trait-Emotional Intelligence Questionnaire to measure self-esteem scores; Five-Factor Personality Inventory; RS-25 Resilience Scale; Maslach Burnout Inventory-Student Survey.
Independent t-tests and Cohen's d effect sizes determined differences in mean self-esteem scores between medical degree programs. Pearson correlations and stepwise multivariate linear regression was used to predict self-esteem scores from personality, resilience, affect and burnout scores. IBM® SPSS® 24.0 was used for statistical analysis. This research was IRB approved.

Results:
Self-esteem (alpha=0.87) scores were significantly higher (d=0.45, p<0.004) for the four-year program students (5.9(1.0)) than the three-year program students (5.4(1.2)).

There were statistically significant (p<0.001) correlations between the factors of self-esteem and: conscientiousness (r=0.3), resilience (r=0.4), guilt (r=0.4), sadness (r=-0.3), joviality (r=0.3), and academic efficacy (r=0.3).

Three-year program: Significant linear regression (R²=0.50, p<.001) of self-esteem as the outcome variable with predictors of optimism, exhaustion, and academic efficacy.

Four-year program: Significant linear regression (R^2=0.67, p<.001) of self-esteem on extroversion, optimism, self-reliance, authenticity, and perseverance.

Conclusions:
Medical student self-esteem was higher on the four-year medical school program than on the shorter three-year program. Predictors of self-esteem for students in the three-year program were driven by elements of emotions or emotional intelligence but were driven by personality and resilience in the four-year program.

References:
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Avera eCARE: Medical Student Education in Telemedicine

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Abstract Body:

Research Statement/Research Question:

The purpose of this research study is to explore medical student knowledge of and interest in telemedicine services in urban and rural communities.

Background and relevance of the study:

In the past, medical students have reported feeling unprepared to use telemedicine and uninformed about laws regarding telemedicine usage following graduation. However, they also reported that telemedicine training is relevant and important for their future work[1].

Design and Methods:

Study participants included medical students taking part in a two day telemedicine education program. The first day includes a faculty seminar where students are introduced to telemedicine by experts in telemedicine innovations. The second day is a simulation day (SIM) where medical students complete a rotation at the Avera eCARE virtual hospital hub. A survey was given prior to the faculty seminar and re-administered following the SIM day. Questions were asked about telemedicine knowledge, curriculum, and willingness to practice via telemedicine.

Results:

A Chi-square analysis was used to look for associations' pre/post by year. Both years show an increase in favorable responses for questions to telemedicine training and education. For analyses by topic area, we created clusters of questions to build scores. T-tests were used to look for associations' pre/post by year. The analysis resulted in three topic areas to build scores. Both years show a significant increase in both Rating of Overall Knowledge and Interest in Curriculum and Utilization. There is no significant difference in Willingness to Practice.

Conclusions:

Results show notable differences in how students perceive and understand telemedicine after structured exposure to telemedicine services. Further, this study demonstrates students' need for and interest in more telemedicine training opportunities in their curriculum. Results demonstrate no significant difference in the willingness to practice in rural settings. Future studies may focus on how telemedicine training is perceived by those more willing to work in rural communities.

References:

1 Waseh, S., & Dicker, A. P. (2019, April 8). Telemedicine Training in Undergraduate Medical Education: Mixed-Methods Review.

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Baseline Differences in Student Attitude Towards Opioid Overdose and Individuals with Substance Use Disorder Contribute to Opioid Overdose and Prevention and Response Training Outcomes

Submission Type: Research Abstract
Accepted as: Poster

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Abstract Body:

Research Statement/Research Question:

The goal of this study is to evaluate the effectiveness of the newly piloted Opioid Overdose Prevention and Response Training (OOPRT) and to assess baseline differences in participant characteristics that may affect learning outcomes.

Background and relevance of the study:

Opioid overdose is the leading cause of preventable death in the USA, and fentanyl continues to be the leading contributor of all drug-related overdose deaths in Wayne County (Detroit Area) [1,2]. As part of a city-wide effort to reduce opioid deaths in Detroit, Wayne State University School of Medicine (WSUSOM) worked with current medical students to develop and pilot the OOPRT program.

Design and Methods:

All students at WSUSOM were invited to complete a baseline survey that evaluated their knowledge (OOKS) and attitudes (OOAS) towards opioid overdose and naloxone (3), as well as their attitudes towards individuals with SUD (adapted from Medical Condition Regard Scale) (4). Two cohorts were enrolled in the study. Cohort 1 consisted of 32 students in Years 1-3 who volunteered for OOPRT and Cohort 2 consisted of 32 Year 4 students for which OOPRT was required. Students filled out the same previously described survey Immediately following the training.

Results:

Improvements in total opioid overdose knowledge and attitudes were found in both cohorts of students ($p<0.001$), with Cohort 1 demonstrating improvement across more domains than Cohort 2. There was no baseline difference in knowledge ($p=0.124$), while notably, there were baseline differences in attitude: Cohort 1 felt less competent than Cohort 2 at managing opioid overdoses ($p<0.05$) and had better regard for patients with SUD (9/11 MCRS subscales with $p<0.05$).

Conclusions:

The results highlight the benefits of OOPRT program for students in all stages of undergraduate medical education. Future studies involving larger cohorts of medical students are needed to validate findings and explore the impact of student attitudes on learning outcomes.

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Clinical performance evaluation in a longitudinal integrated clerkship: Students' performance progression

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Abstract Body:

Research Statement/Research Question:

Students at our school complete a 24-week longitudinal integrated clerkship (LIC) and five 4-week inpatient clerkships during Year 3. They are assigned to either fall or spring LIC. Using a competency-based rubric of 17 Likert-scale questions, preceptors

Background and relevance of the study:

Literature demonstrates the complexity of clinical performance assessment such as validity evidence of assessment tools, bias and rater behaviors, and narrative feedback (Hawkins, et. al., 2010; Raaum, et. al., 2019; Chan, et. al., 2017). Few studies examined progression of student competencies based on preceptors' ratings repeated at different timings that hinged on endorsements for students' progression. Little is known about the trajectory of medical students' growth in clinical settings and how the timing of their LIC might impact students' performance.

Design and Methods:

This study examined data collected from 90 students in AY2018-19 using SPSS. Due to violation of normality, the nonparametric testing Wilcoxon signed rank test was used to examine students' progression and Mann-Whitney Test for the impact of timing on clinical performance.

Results:

Results showed a statistically significant improvement of overall students' competencies from Week 8 to 16 and Week 16 to 24. The improvement varied with Patient Care demonstrated the largest improvement, Professionalism moderate and Practice-based Learning least. Spring semester students performed significantly higher than the fall group in Week 8. However, no significant difference appeared between two groups by Week 16. Students in the spring semester performed significantly lower than the fall group by Week 24.

Conclusions:

The study confirmed improved students' competencies during the trajectory of 24 weeks of LIC and the sequence of the LIC before or after hospital-based clerkships had no effect by the end of the LIC.

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Competitive Specialty Fourth Year Rotations: Fourth Year Medical Student Perspectives

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Abstract Body:
Research Statement/Research Question:
This study characterizes why fourth year medical students (M4s) applying into competitive specialties choose to rotate at specific institutions, the educational experiences available during these rotations, and the students' confidence to function as a first-year resident.

Background and relevance of the study:
M4s applying into competitive specialties complete multiple clinical rotations in their desired specialty. These rotations represent an opportunity for students to prepare to function as residents. However, prior studies report that these elective rotations offer limited structured education.

Design and Methods:
An anonymous survey was distributed to 2,747 applicants to seven University of Chicago residency programs. "Competitive" specialties were defined using an applicant to residency position ratio > 1.0 in the 2017 NRMP Match (dermatology, interventional radiology, neurosurgery, orthopedic surgery, otolaryngology, plastic surgery, and radiation oncology).

Results:

424/2747 (15.4%) applicants completed the survey, reporting on 1,369 rotations. Median number of rotations was 3. 33% of rotations were completed at home institutions. 33% of away rotations were chosen primarily to obtain a residency position at that institution. On a scale of 0 (audition elective) to 100 (educational elective), students rated the primary goal of the rotations as 40 ± 20. 68% of rotations yielded letters of recommendations. Educational activities during rotations included faculty/chief-resident led case discussions (53%), lectures (30%), and hands-on sessions (25%). 31% of rotations were reported as having no structured didactics.

Conclusions:

M4s applying to competitive specialties are completing multiple fourth year rotations with limited structured didactics. With most rotations yielding letters of recommendation for residency, it is not surprising that students perceive these as more auditions rather than educational experiences. Finding a good fit between program and applicant should not occur at the expense of education. Adding structured curricula to M4 rotations in competitive specialties could take advantage of the time these students spend completing these rotations to better prepare them to function as resident physicians.

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Context impacts ob gyn resident performance and attitude after participation in a quality improvement curriculum

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Abstract Body:
Research Statement/Research Question:
How do contextual factors affect residents' attitude, confidence, and ability to apply their QI knowledge after participating in a targeted QI curriculum?

Background and relevance of the study:
In order for QI to be perceived as a critical core value, there must be a deeper understanding of what aspects of the individual learner, the learning environment, and the interaction between the learner and his/her environment impact QI education. Therefore, successful implementation of QI curricula can be enhanced by attending to local contexts (learners, faculty, institutional setting). The research to date does not address specifically how context impacts residents' confidence, attitude towards QI work or ability to apply QI knowledge.

Design and Methods:
An explanatory sequential mixed methods design was . First and second year residents were exposed to a didactic and experiential 11-month QI curriculum. Pre/post curriculum assessments included QI knowledge application (QIKAT-R, range 0-9) and a questionnaire measuring confidence/attitude about QI (range 6-50). Quantitative data were analyzed using a two-way mixed design ANOVA. After completion of the assessments, participants engaged in semi structured interviews to facilitate understanding of how contextual factors affected their attitude, self-confidence and/or their ability to apply their QI knowledge.

Results:
37 residents from four residencies participated in the curriculum. The overall QIKAT-R score $(3.8+0.3$ vs. $4.9+0.3$, $p < .0001$, $\eta2 = .33$) and composite self-efficacy score $(32.5+0.7$ vs. $36.6+0.8$, $p < .0001$, $\eta2 = .55$) significantly changed after the curriculum. Semi-structured interviews revealed that prior QI exposure, perceived department value of QI, engagement of the faculty preceptor, and time allotted for the curriculum were associated with a change in QI knowledge and overall attitude about QI practice.

Conclusions:
This study demonstrates that exposure to a targeted QI curriculum will result in increased resident confidence and attitude in applying this knowledge. Individual and departmental contextual factors are important to consider when designing and implementing a QI curriculum.

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Creating a More Diverse and Competitive Applicant Pool with Targeted Supplemental Advising

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Abstract Body:

Research Statement/Research Question:
This project aims to address disparities in medical school applications and attract a more diverse and competitive applicant pool by supplementing undergraduate advising while informing potential applicants about the University of South Dakota Sanford School of Medicine

Background and relevance of the study:
Research has shown that individuals from underserved areas and lower socioeconomic classes are dissuaded from pursuing a career in medicine due to a stereotyped view of doctors and medical school as well as by a lack of informational resources. Students of all backgrounds lose interest in becoming a doctor due to a lack of proper advising.

Design and Methods:
A survey was created for premedical students attending colleges in South Dakota. This survey asked about medical admissions information students struggled to find. A second survey completed by newly matriculated SSOM medical students focused on their premedical advising, the application process, and MCAT preparation. Based on the data, two MCAT informational documents and a document to highlight SSOM programs were created for students and advisors.

Results:
Eighty-five undergraduate students responded to the pre-project survey that showed a minority of students knew of the research and clinical programs USD wants to highlight. 85% of these students struggled to find information about clinical requirements in medical school, and 63% struggled to find MCAT advice. Ninety-eight students completed the post-matriculation survey, that showed 51% of students wished they would have had MCAT Advice.

Conclusions:
This project identified areas that undergraduate students struggled to find information about and then created documents to provide these students with the missing knowledge. Current SSOM students provided additional information by sharing the tactics they utilized to navigate the admissions process. Through these resources, undergraduate advising will be improved, leading to a more diverse and qualified applicant pool.

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Diagnostic Assessment of the Gastrointestinal Physiology Course in the Foundational Science Curriculum for Medical Students

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Abstract Body:
Research Statement/Research Question:
The objective of the present study was to qualitatively analyze the outcome of a learning strategy using student performance in the assessments as an index.

Background and relevance of the study:
With the introduction of diverse learning strategies in preclinical education, there is an imperative for outcome assessment. This study tried to determine the efficacy of a pedagogy introduced in our new curriculum, using a cognitive diagnostic assessment[1] which identifies the students' mastery of contents.

Design and Methods:
In the gastrointestinal physiology system for M2s, students were provided with short online learning modules (LMs) to prepare them for the more in-depth in-class sessions (ICLs). The instructor then identified six binary skills one or more of which were marked to be necessary for answering each question from this content on the exam. A non-parametric Q-matrix estimator[2] was used to validate the question-by-skill Q matrix. Attendance in the in-class sessions and the usage of learning modules were tracked and analyzed for correlation to the content mastery.

Results:
We found that 82% of the exam takers attained mastery of skills from the contents in the LMs. 53% of the students acquired mastery of ICL contents. Interestingly, only 28% acquired complete mastery, but they belonged to the subgroup that attained content mastery from ICLs. 70% of the students who attained content mastery availed the materials from ICLs, either by attending the class or by using session recording. Most importantly, the students who did not attend the ICLs or use the LMs did not attain complete mastery of the subject.

Conclusions:
This study demonstrates the strength of e-technology as a learning enhancer when used as a facilitating feature integrated into the traditional lecture-style classes. This type of scientific analysis provides an opportunity for our instructors to identify the areas of weakness in the system and to appropriately modify the strategies.

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Does Rotation Service Assignment Affect the Teaching Experience and Knowledge Gained for Medical Students during their Core Pediatric Clerkship?

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Abstract Body:

Research Statement/Research Question:
Does assigned service (hospitalist versus non-hospitalist) during the core pediatric rotation impact teaching exposure and knowledge gained by medical students?

Background and relevance of the study:
Medical students complete a four-week core pediatric clerkship rotating on a hospitalist or non-hospitalist service. Due to concerns about variable exposure to patient cases and teaching across services, we evaluated the frequency of informal resident-led teaching on hospitalist and non-hospitalist services, as well as measuring knowledge gained by students during their clerkship.

Design and Methods:
For this year-long observational study, students are completing 20-question pre- and post-rotation knowledge assessments developed using PreTest questions[1] modeled after the NBME Pediatrics subject exam[2]. Residents are providing weekly data including clinical service, post-graduate year, and number and specialty of topics taught. Plan to compare knowledge acquisition with pre-/post-test scores, and educational experience by teaching topics on hospitalist and non-hospitalist services using t-test, adjusting for hospital census.

Results:
Thirty-two students have participated in the assessments so far. Preliminary, unadjusted results for 75% of the study period demonstrate a trend towards significance for greater knowledge gained while on a non-hospitalist service (85% vs 81%, p=0.17). Residents on the hospitalist service taught more on average per week than the residents on the non-hospitalist services (2.8 vs 2.1, p=0.037). Senior residents (N=127) also taught more than interns (N=80) per week (2.6 vs 1.9, p=0.006).

Conclusions:
Our data demonstrates students on the hospitalist service (N=18) are exposed to more teaching topics, on average, than those on non-hospitalist services (N=14). Increased informal teaching from senior residents is likely related to knowledge and time available. While there is a trend toward significance, currently there is no difference in knowledge gained between groups, suggesting no detriment to students assigned to a non-hospitalist service. Future directions may

include identifying and implementing highest yield teaching topics, and data collection on self-study time on either service.

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Empathy and Burnout change during Primary Clinical Clerkship Year and Community Size

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Abstract Body:

Research Statement/Research Question:

Does the community size a student spends their Primary Clinical Clerkship year within impact the change in empathy and burnout experienced over the course of the year?

Background and relevance of the study:

Existing research shows that as students' progress through medical school empathy decreases and burnout increases[1]. Previous research done at our institution shows that student perception of how valued they are correlates to the community size they learned in[2]. We posited that other measures of student wellness may also be impacted by community size.

Design and Methods:

We sent students a survey at two points during their Pillar 2 (Our student's primary clinical clerkship year) to measure their empathy and their burnout. Students completed the self-assessment at the beginning of Pillar 2 and again at the end of Pillar 2. We collected the data for 3 academic years. A 2X2 between-group multivariate analysis of variance was performed on two dependent variables: empathy and burnout. Independent variables were time and campus. SPSS MANOVA was used for the analysis.

Results:

Across all campuses students showed an increase in burnout and a decrease in empathy. We found significant differences in the change to both Burnout and Empathy at the five locations we sampled. We found that the students in the two smallest community groups experienced less decrease in empathy and less increase in burnout than their peers in the largest three communities.

Conclusions:

Community size seemed to impact the student's change in empathy and burnout, with a smaller community size appearing to be protective.

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Gender Bias and Sexism: Emerging Themes in Third-year Medical Students' Written Reflections in a Required Health Disparities Core Day Course

Submission Type: Research Abstract
Accepted as: Oral Abstract Presentation

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Abstract Body:

Research Statement/Research Question:
To begin to explore medical student perspectives regarding gender bias

Background and relevance of the study:
Gender bias in healthcare settings has been well-described[1-12]. Students' perspectives regarding gender bias in clinical experiences have received less attention.

Design and Methods:
A Health Disparities course including simulated clinical scenarios required students to complete a written reflection per the LeAP rubric[13]. In this IRB-approved qualitative study, we sorted reflections written in 2014-2016 to identify common topics. We used inductive thematic analysis to identify themes in the reflections that addressed gender bias.

Results:
The 876 reflections were sorted into 10 topics. The most common selected topics were: spirituality (27%), gender bias/sexism (22%), and socioeconomic status (11%). Preliminary analysis of reflections focusing on gender bias suggested the following emerging themes:

1) Emotions of anger and discomfort
   "I had an incredibly emotional response …—in a few short minutes, my blood was quickly boiling"
2) Defeatist mentality (acceptance of sexism)
   "How can you challenge patient beliefs in a way that is not patronizing and will not alienate them as patients? How do you challenge attendings or colleagues without being confrontational?"
3) Tension between students' self-advocacy and prioritizing patients' perspectives
   "I continue to struggle with …. wanting to be respectful and courteous but also wanting to be firm, direct and confident."
4) Feeling unprepared when faced with sexism; desire to develop a plan for future response
   "In the heat of the moment, I find it hard to put together the right words without sounding overly harsh or defaulting…"

Conclusions:

Sexism-themed reflections described students' emotional responses to gender bias in clinical encounters. Further thematic analysis may inform efforts to support students as they develop self-awareness regarding their responses to bias and professionally appropriate ways to manage the emotional challenge of personally-experienced gender bias, advocate for themselves and peers, and counter implicit and explicit gender bias encountered in their own clinical practice.

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How well do practice exams predict medical students' Step 1 score?

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Abstract Body:

Research Statement/Research Question:
The purpose of this study was to examine the association between medical students' CBSSA scores and Step 1 scores to determine how well these practice exams predict actual Step 1 scores.

Background and relevance of the study:
USMLE Step 1 is the first of three licensure examinations required to practice medicine in the U.S. and is a measure of competitiveness for residency. Students often use NBME Comprehensive Basic Science Self-Assessments (CBSSAs) to prepare for Step 1. However, students' performance on CBSSAs is often inconsistent, which may lead some to question their preparedness.

Design and Methods:
Hierarchical multiple regression was used to determine how well CBSSA scores predicted actual Step 1 score. A baseline regression model examined the effects of students' gender, MCAT score, and course failures on Step 1 performance. Each CBSSA score was then added to the model to determine its impact on overall model fit and the association between each CBSSA score and actual Step 1 score.

Results:
The population included 337 students who took Step 1 between March and September 2018 and took at least 1 CBSSA. Students took an average of 3.99 ± 1.51 CBSSAs. CBSSA scores strongly correlated with Step 1 scores ($r = .668-.838$; $p < .001$). Each CBSSA significantly predicted Step 1 score and explained 22-32% of the variance above the baseline model. Changes in CBSSA scores had little impact on Step 1 score with coefficients ranging from .83-1.07. Course failures, by comparison, predicted a 7-22-point decrease in Step 1 score.

Conclusions:
Changes in CBSSA scores predicted small, incremental changes in Step 1 score. The variable with the greatest impact in each model was a course failure in the pre-clinical years. The results of this study will be useful to future medical students as they prepare for Step 1, and academic advisors to help identify students who may require additional assistance to prepare for Step 1.

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Impact of a Rural Longitudinal Integrated Clerkship on Workforce Outcomes

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Abstract Body:
Research Statement/Research Question:
The purpose of this study was to determine the association between participation in a rural LIC and the desired graduate workforce outcomes of 1) practice in-state 2) specialty in primary care, especially family medicine, and 3) practice in a rural settin

Background and relevance of the study:
Nationwide, the United States faces a shortage of physicians in rural practice and primary care specialties. Medical schools can play an important role in addressing this shortage by producing graduates who fill these gaps, and it is part of the mission of land-grant public institutions to meet the unique workforce needs of their home state. The Rural Physician Associate Program (RPAP) longitudinal integrated clerkship (LIC) at the University of Minnesota Medical School (UMMS) was created in part to address these needs.

Design and Methods:
Practice outcomes were analyzed from 9,264 graduates of UMMS from 1972-2016. Data from internal UMMS student databases were linked to data from the American Medical Association (AMA) Physician Masterfile and the National Plan and Provider Enumeration System's (NPPES) National Provider Identifier (NPI) registry, demonstrating a novel method to link educational data to practice outcomes.

Results:
Significant differences in workforce outcomes were demonstrated between UMMS graduates who participated in the RPAP LIC versus those who did not. Compared to non-RPAP graduates, more RPAP graduates practice in-state (64.23% vs. 52.93%), specialize in primary care (75.61% vs. 49.28%) -- the difference is particularly pronounced in family medicine (61.71% vs. 18.26%) -- and practice in rural settings (47.40% vs. 16.31%). Chi-square tests of independence found significant relationships ($p < 0.001$) between RPAP participation and all three practice outcomes under study.

Conclusions:
These findings demonstrate an association between participation in a rural LIC and desired workforce outcomes. Further studies are needed to explore causality as well as characteristics of those learners who are likely to participate in a rural LIC.

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Interprofessional Education in Medical School: Is it effective in changing physician knowledge and attitude?

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Abstract Body:

Research Statement/Research Question:
Does formal interprofessional training during undergraduate medical education impact residents' knowledge, skills, or attitudes on interprofessional collaboration?

Background and relevance of the study:
Based on accreditation standards, curricula focused on interprofessional teams have been introduced within undergraduate medical education.[1,2,3] Nearly all medical schools (n=140) currently incorporate interprofessional education.[4] While studies have assessed effects of curricula on knowledge, attitudes, and beliefs following training, no studies have assessed whether impacts last into residency.[1-6]

Design and Methods:
A cross-sectional study was conducted with first-year internal medicine residents (2015-2018). Each resident completed a questionnaire prior to ambulatory education sessions. The questionnaire asked about formal interprofessional education during medical school (if received, structure) and assessed knowledge, skills, and attitudes about interprofessional practice. Knowledge-based questions asked about roles and responsibilities of nursing staff using a case-based approach. Attitudes were assessed using the validated Attitudes Toward Health Care Teams Scale. Self-reported skills and attitudes were assessed via Likert scale. For analysis, participants were stratified based on whether they received formal interprofessional training in medical school. Chi-squared tests were utilized to compare knowledge, skills, and attitudes between groups.

Results:
A total of 120 first-year internal medicine residents (85.7%) completed the questionnaire. Two-thirds of residents reported receiving formal interprofessional education during medical school. Residents described varying education formats, including classroom-based, shadowing, and hands-on clinical experiences. When comparing residents who did and did not receive formal interprofessional education during medical school, there was no statistically significant difference in knowledge, self-assessed skills, or attitudes (all $p>0.05$).

Conclusions:
Interprofessional education has become increasingly incorporated in undergraduate medical

education, but intermediate-term benefits are not clear. Residents' positive attitudes about interprofessional practice may make it challenging to identify differences between groups. Future studies should evaluate if specific formats or doses of interprofessional education are associated with improved knowledge, skills, and attitudes in residents.

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Keys to Implementation Success: A Qualitative Analysis of Early Implementation of Health Systems Science Curricula

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Abstract Body:
Research Statement/Research Question:
This participatory action research project sought to elucidate key institutional, cultural and operational factors around implementation of health systems sciences (HSS) curriculum. Specifically, what contextual factors are critical for educational leade

Background and relevance of the study:
The American Medical Association's (AMA) "Accelerating Change in Medical Education" initiative aims to develop the medical school of the future. While many medical schools are implementing HSS, many struggle to integrate HSS into their curriculum. AMA implementation data includes integration efforts, hours dedicated to HSS competencies, and instructional and assessment methods[1].

Contextual factors that underlie formal implementation decisions are ill-defined[2,3]. For example, the background and culture of the medical school related to experiential learning; the make-up of the faculty and student body; the appreciation of the need for teamwork for physician competence; the relationship between the medical school and affiliated health system; and availability of adequate experiential learning opportunities.

Design and Methods:
Participatory action research relies on qualitative methods to evaluate the impact of collaborations. Individuals from AMA-funded schools participated in semi-structured interviews from March to July, 2019. Interview transcripts were independently reviewed and coded by four members of the research team. These codes were reviewed and discussed for broader themes.

Results:
16 medical schools were interviewed. Over 70 codes were identified in the transcripts. Broad themes were identified, such as challenges to implementation, which involved operational relationships between the school and health care system. Successes and barriers were noted by the presence or absence of a faculty champion.

Conclusions:
HSS has been defined as the science of health care delivery. Having faculty champions and strong relationships with the health care system are critical for effective integration of HSS within the medical school curricula. Participants shared valuable lessons learned regarding success and barriers to effective HSS curricular adoption.

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Leadership Views on the Barriers and Incentives to Clinical Preceptorship

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Abstract Body:

Research Statement/Research Question:
This study aimed to describe leadership perceptions of preceptor incentives and barriers to better understand knowledge gaps, existing incentives, potential solutions, and barriers to solution implementation.

Background and relevance of the study:
Clinical education often relies on a one-to-one student-preceptor model. Recruiting and retaining quality preceptors to sustain this model has become increasingly difficult at academic institutions across the nation. While ample literature describes preceptor barriers and incentives as viewed by physicians, few studies explore the issue from academic and clinical leadership perspectives.

Design and Methods:
Between February and July 2019, the researchers conducted one-on-one semi-structured interviews with sampled representation of Medical College of Wisconsin leadership. The researchers reviewed transcriptions of each interview verbatim and used a qualitative grounded theory approach to generate content themes. Researchers iteratively refined themes using the constant comparison method until all interviews were analyzed and final themes and subthemes were defined.

Results:
The researches interviewed twelve institutional leaders and identified four major themes: student impact, recognition, physician well-being, and leadership.

Conclusions:
Collectively, leadership perspectives aligned well with preceptor views as established in the literature. Each theme, however, highlighted areas for institutions to consider when addressing preceptor issues: 1) knowledge gaps regarding problem scope, particularly preceptor time commitments and the number of preceptors required, 2) current lack of recognition through career advancement or clearly defined promotion criteria, 3) intrinsic reward while important may no longer be sufficient for participation, 4) a centralized office may be best for providing comprehensive and streamlined solutions.

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Lessons from the AAMC Core Entrustable Professional Activities (EPAs) for Entering Residency Core EPA Pilot Project: Qualitative Analysis of the M3 Survey

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Abstract Body:

Research Statement/Research Question:
The purpose of this study was to understand students' perspectives on the Core Entrustable Professional Activities (EPAs) pilot that broadly inform other current and future EPA-based curricular development and assessment approaches.

Background and relevance of the study:
The Association of American Medical Colleges' Core EPAs were developed to promote a shared understanding of essential tasks graduating students should be able to perform under indirect supervision upon entering residency[1]. Students at the 10 schools participating in the Core EPAs Pilot Project[2] are important stakeholders in these schools' Core EPAs implementation efforts.

Design and Methods:
An online questionnaire administered to M3 students at the 10 pilot schools in Spring 2019 included two open-ended questions at the end of the survey: "What aspects of EPA implementation at your school" a) "have been most helpful to you as a learner?" (HELPFUL), and b) "could be improved or altered?" (IMPROVE). The data were independently analyzed for themes by two study team members (LS and KM); iterative analysis was performed until consensus was reached.(3)

Results:
Of 687 M3-student respondents, 335 (49%) provided narrative comments. Across schools, predominant HELPFUL themes included: EPAs created common expectations for learners and faculty; and the culture of feedback was positively impacted by EPA implementation; predominant IMPROVE themes included: the detrimental impact of a lack of general awareness of EPAs among all stakeholders (particularly assessors); and a lack of shared understanding of assessment and feedback of EPAs particularly in relation to grades.

Conclusions:
Students identified the Core EPAs framework as useful in helping them to both understand what is expected in their clinical performance, and to obtain frequent, quality feedback on their clinical skills. Substantive and ongoing-faculty development efforts, communication about curricular and assessment practices, and user-friendly workplace-based assessment systems are warranted for effective implementation of Core EPAs.

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Management x Medicine: Exploring the Frontier of Medical Education

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Abstract Body:

Research Statement/Research Question:
Understand the demand in the medical curriculum for an integrated management in medicine lecture series and design an appropriately tailored curriculum.

Background and relevance of the study:
As economic pressures for cost-effective care continue to rise, the physician's role is rapidly changing and need for formal business education is increasing. A recently published article in NEJM Catalyst highlights this need, proposing that faculty at medical schools across the country collaborate with their business school counterparts to develop an interdisciplinary fourth-year business rotation for medical students.

Design and Methods:
All current CWRU SOM students were administered a survey to assess interest level, baseline business knowledge, and topics of interest. With help from UH physician executives, we used this data to design a ten-speaker lecture series offered monthly to all medical students. Interested students were asked to complete an entry survey prior to the first lecture, and were asked for feedback following each subsequent lecture. A mid-curriculum survey was administered to gauge student satisfaction.

Results:
85.6% of initial survey respondents demonstrated interest in taking a "business elective", with 78.4% having no prior exposure to medical management. Students were interested in (1) insurance and compensation, (2) physician contracts, and (3) private practice logistics. Of six lectures to date, 76 students have attended (average attendance: 25.5 students). 21/22 students when asked about course satisfaction in mid-curriculum survey reported "strongly agree" or "agree". With attendance of lectures, students reported increases in their understandings of hospital operations (3.01 to 4.50), hospital financial structure (2.78 to 4.73), and workforce management (3.18 to 4.91).

Conclusions:
There is an increasing need for a formal business curriculum in medical education, and an increasing demand for such a curriculum amongst students at our institution. Overall, students report a high level of satisfaction with our lecture-series. We hope to establish this curriculum as an important integrated component of the CWRU SOM curriculum.

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Pearl RM and Fogel AL. "New Physicians Will Need Business School Skills." NEJM Catalyst. August 7, 2017.

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Measuring Quality Improvement in the M3 Pediatric Clerkship using Causal Impact Analysis with Time-Series Modeling

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Abstract Body:

Research Statement/Research Question:
To evaluate temporal changes in student satisfaction with curricular innovations using causal impact analysis.

Background and relevance of the study:
Clerkship directors need effective tools to track improvement in student clerkship experiences after implementing curricular innovations. The dynamic nature of clinical teaching often precludes randomized-controlled studies, thus requiring other methods for analysis. Causal impact analysis uses a prediction model to infer the effect of an intervention over time[1-3].

Design and Methods:
Upon reviewing our end-of-clerkship surveys after each block rotation for academic year (AY) 2018 (10 blocks each year), we identified two areas for improvement: course didactics and required learning. In AY 2019, two interventions were introduced to address this: 1) faculty development after block 3 to provide teaching feedback/training, and 2) new didactic lectures/additional faculty after block 7. IRB approval was obtained.
The targeted interventions were examined using causal impact analysis incorporating time-series modeling. The trend in blocks 4 to 6, after the first intervention in block 3, was projected on to blocks 7 to 10 as the expected result. The difference of the actual results in blocks 8 through 10, after the second intervention in block 7, from the expected results are calculated and plotted as the cumulative effect of the intervention starting in block 8.

Results:
We found a significant effect for the changes in didactic lectures with a 113% increase in the rate of agreement (95% CI:42%-184%; p=0.005), and required learning had a significant improvement of 81% (CI:0.31-164%; p=0.03).

Conclusions:
We were able to measure the effect of the interventions showing an improvement for both areas identified. Our statistical method reduced the confounding influence of temporal changes among blocks of varying student composition. This method can be introduced for tracking quality improvement in a clerkship, and is transferable to other clerkships and institutions.

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Medical Faculty's Perception of the Use of Altmetrics

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Abstract Body:

Research Statement/Research Question:
This study examined the perceptions of medical faculty regarding their use of altmetrics and how factors such as career focus and social media use influence their opinions.

Background and relevance of the study:
Alternative metrics (altmetrics) are non-traditional metrics that capture the impact of research outputs through downloads, social media shares, and other measures.[1] The use of altmetrics as indicators of scholarly/societal impact has garnered increased attention over the last decade. However, the degree to which faculty demographics, career stage, professional roles, and areas of research focus influence perceptions and use of altmetrics has yet to be characterized.

Design and Methods:
Medical faculty responded to a Qualtrics survey distributed through social media platforms and organizational listservs. The survey collected demographic information and data on social media usage, the likelihood of disseminating altmetric outcomes in academic documents (e.g., CV), and perceptions on the value/utility of altmetrics.

Results:
Of the 48 respondents, 23 were male and most were from North America or Oceania (81%). All age groups and career levels were represented. While only 17% indicated their institution endorses altmetrics, slightly more than half (54%) indicated altmetrics were 'moderately' to 'extremely valuable'. A Pearson's correlation revealed that frequent social media usage was strongly and positively correlated with favorable perceptions of altmetrics ($r=0.512$, $p<0.001$). Neither age range, career level, nor years of experience explained one's level of social media usage ($p>0.402$) or one's favorable perceptions of altmetrics ($p>0.200$). Irrespective of respondents' primary professional roles, areas of research focus, or whether their institution endorsed altmetrics, no significant differences ($p>0.05$) in social media usage or altmetric perceptions scores were detected.

Conclusions:
This study suggests that more favorable perceptions of altmetrics are associated with higher social media use. These results also indicate that favorable perceptions of altmetrics traverse career level or experiences. Next, this study will interview faculty for a richer understanding of their perceptions of altmetrics.

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Megatrends in Medical Education Revisited: A 10 Year Update on Where We Are and Where We Are Headed

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Abstract Body:
Research Statement/Research Question:
Through a scoping review of the literature across ten megatrends in medical education, the authors critiqued projections made in 2008, then set out to project what will happen in the next 10 years.

Background and relevance of the study:
Megatrends[1-2] in Medical Education was the theme for the 2008 Generalist's in Medical Education Conference.[3] Based loosely on the Naisbitt book from 1982, the theme was intended to help educators distinguish between passing fads and meaningful trends.[4] This project was an update on that original work.

Design and Methods:
We have completed a comprehensive review of the current literature on these megatrends: Globalization, Simulation, Rising Costs of Care and Education, Redefinition of Desired Physician Traits, Need for Continuity across Med-Ed Continuum, Interprofessional Healthcare Education, Recognition of Med-Ed as a subspecialty, Lifelong Learning, Change in the Med-Ed Setting, and Technology. Using futurists methodology, relevant articles were identified, reviewed and summarized. From the literature summaries, the authors critiqued original projections published in 2009[4], and predicted where medical education will go in the next decade.

Results:
The topics of technology and simulation generated the most literature. Educators predict a decoupling of clinical education from clinical service and a movement towards simulation-based

education.[6] Educators will also move towards a systems-based approach to education and become more responsive to patient population needs by covering competencies involved with: patient safety, health care for the elderly, leadership, advocacy, efficiency and cost reduction.[7] Competency-based, individualized education will become the standard. Specialized programs to develop practitioners to fill healthcare needs where shortages exist will also become prominent.

Conclusions:

All the Megatrends selected in 2008 remain important. The 2008 authors probably could not have imagined the dramatic role that simulation and technology have had in shaping medical education today. They would be disappointed in the lack of progress on interdisciplinary and interprofessional healthcare education and with establishing a medical education continuum.

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One Test to Rule Them All: USMLE Step 1's Influence On Medical Student Decision-Making and Emotion Work Regarding Step 2 CK

Submission Type: Research Abstract
Accepted as: Oral Abstract Presentation

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Abstract Body:

Research Statement/Research Question:

We explored the complex decision-making processes and emotion work that medical students face preparing for and taking the Step 2 CK exam, with particular attention paid to how previous experience taking Step 1 influences student experiences.

Background and relevance of the study:

With increased competition for residency positions, United States Medical Licensing Examinations (USMLE) scores have increasingly been used by program directors for residency selection.[1,2] More emphasis has been placed on USMLE Step 1 compared to Step 2, as evidenced by the number of study resources, practice examinations, and amount of curricular time dedicated to these exams.[3] Step 2 CK in particular is relatively understudied despite increased importance especially amongst certain specialties.

Design and Methods:

In 2018-19, we conducted six focus groups with fourth-year medical students at the University of Illinois College of Medicine to explore student experiences and beliefs related to Step 2 CK and previous experience taking the Step 1 exam. We used qualitative, phenomenological methods to identify trends in our participants' responses.

Results:

USMLE Step 1 has a considerable influence on student strategies and emotions approaching Step 2 CK. This includes when to take the exam, how much time to dedicate to study, and setting a target score. Students also reported a lower degree of energy both from the student and administrative standpoint focusing on Step 2 CK, burnout induced by Step 1, and a lack of motivation for Step 2. Finally, students highlighted a lack of or conflicting advice surrounding Step 2 CK and its importance, despite pressure to improve their performance compared to Step 1.

Conclusions:

Our findings provide a much-needed student voice related to how students approach the USMLE Step 2 CK exam, and how much their experiences on Step 1 influences their perspectives. Future work will focus on addressing issues faced by students approaching Step 2 CK.

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Optimism and Step 1

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Abstract Body:

Research Statement/Research Question:

Are medical student optimism levels correlated to USMLE Step 1 scores?

Background and relevance of the study:

Optimism is a personality trait that correlates with improved coping skills, physical health, and emotional wellbeing. Various interventions have been shown to increase optimistic thinking. To date, there have been few investigations into the effect of optimism on academic performance. For medical students, the USMLE Step 1 exam is a significant stressor that has a large impact on future career options.

Design and Methods:

Beginning on February 27th, 2019, one week after completing their foundational sciences curriculum, 2nd year medical students (n=112) at the Indiana University School of Medicine completed the Life Orientation Test-Revised (LOT-R), which assesses dispositional optimism. The LOT-R includes six questions scored on a 5-point Likert Scale from "I disagree a lot" to "I agree a lot". Higher scores indicate a higher level of optimism. Students were instructed to complete the LOT-R before sitting for the Step 1 exam between February 23rd and April 6th. The correlation between Optimism scores and Step 1 exam scores were examined. The study received approval from Indiana University's Institutional Review Board.

Results:

The Optimism scores ranged from 6 to 30, mean = 22. The mean for adults ages 18-30 is 22.1. Step 1 exam scores ranged from 189 to 268, mean = 236.4. There was a small positive correlation (Pearson 0.257) between Optimism scores and Step 1 exam scores (p=0.006). There were no gender differences in Optimism or Step 1 exam scores.

Conclusions:

These results indicate that optimism may be a potentially significant factor associated with medical student performance, specifically on the USMLE Step 1 exam. Further research should investigate if a causal relationship exists between the two factors. If such a relationship is found, interventions specifically targeted to increase optimism may prove useful for improving student academic performance and possibly their overall wellbeing.

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Predicting the USMLE Step 1 Exam Scores from Grid-Calibrated NBME Comprehensive Basic Science Exam Domains for Three-Year and Four-Year Medical Degree Programs

Submission Type: Research Abstract
Accepted as: Poster

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Abstract Body:
Research Statement/Research Question:
The purpose of this study is to compare the predictive capacity of CBSE student scores on Step 1 scores between three- and four-year medical degree programs at a medical school.

Background and relevance of the study:
The USMLE® Step 1 exam is a requirement for medical school graduation and an important evaluated factor in the application to medical residency programs. In preparation, medical schools administer the NBME® Comprehensive Basic Science Exam (CBSE)[1] to medical students to provide a measure of medical knowledge, report the subject domains where additional preparation is needed,[2] and predict passing rates.[3]

Design and Methods:
In spring 2019, second-year medical students from the three-year (N=49) and four-year (N=185) programs completed the CBSE exam prior to completing Step 1. The CBSE Examinee Performance Profile reports the total score in numerical format, and multiple subject domain scores (e.g., pathology) by visual horizontal bands which were calibrated to yield numeric scores (scale:1-9).
Pearson correlations and stepwise multivariate linear regressions were used to predict the Step 1 scores from CBSE discipline subject domains using IBM® SPSS® 24.0.

Results:
CBSE and Step 1 scores were significantly correlated(r=0.76, p < 0.001). The average of the eight visually calibrated discipline subject domains (alpha=0.93) was significantly (r=0.96, p < .001) correlated to the numerically reported CBSE score.
Three-year program: Pathology(beta=.49) and histology/cell biology(beta=.34) significantly predicted Step 1 scores (R^2=0.62, p < .001) via linear regression analysis.
Four-year program: Pathology (beta=.31), pharmacology (beta=.28), and microbiology/immunology (beta=.21) significantly predicted Step 1 scores (R^2=0.56, p < .001).

Conclusions:
Pathology was the primary predictor of Step 1 across both programs due to the consistent, extensive coverage of diseases in the second year of medical school. Secondary CBSE predictors varied between programs suggesting that students may be prioritizing and aligning the course

material of tissue structure in the three-year program to Step 1 versus microorganisms and drugs in the four-year program.

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Promoting the advancement of underrepresented minority learners through community-based internships: an exploratory analysis

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Abstract Body:

Research Statement/Research Question:
To examine the experiences of students participating in the Doctors of Tomorrow summer internship program in order to better understand how their engagement influenced personal and professional development.

Background and relevance of the study:
Doctors of Tomorrow (DoT) is a pipeline program between the University of Michigan Medical School and Cass Technical High School in Detroit where the overall mission is to encourage youth from communities that are underrepresented in medicine to pursue their interests in healthcare careers. Students have the opportunity to apply for a summer internship between 9th grade and 10th grade. There is limited literature on the effectiveness of experiential-learning opportunities in pipeline programs to support development of personal and professional skills. Therefore, the goal of our study was to determine the effectiveness of summer internships as experiential-learning opportunities in a pipeline program for underrepresented high school students interested in healthcare fields. We believe this inquiry will yield new insights into enhancing pipeline programs that support URM students in their pursuit of healthcare careers.

Design and Methods:
An exploratory qualitative study was conducted using responses from 36 students who participated in the DoT summer internship program between 2014-2018. Students engaged in self-reflective practices prompted by weekly surveys. Data were analyzed through an inductive process by coding and thematic analysis.

Results:
Four overarching themes were identified: (1) engagement in authentic experiential-learning opportunities; (2) development of professional skills; (3) self-reflection and actualization; and (4) real world barriers in experiential-learning.

Conclusions:
High school students engaged in a variety of different community internships and shared insights that illustrated depth and diversity of understanding health in their community. Their reflections illustrate the added value of experiential-education in pipeline programs.

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Reducing the "July Effect": Using Association of American Medical Colleges (AAMC) Entrustable Professional Activities (EPAs) to Ensure Institutional Patient Safety

Submission Type: Research Abstract
Accepted as: Poster

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Abstract Body:

Research Statement/Research Question:
Based on AAMC Entrustable Professional Activities (EPAs), a multispecialty, patient-safety-driven objective structured clinical evaluation (OSCE) assessment was delivered during intern orientation. Objectives included: developing a standardized approach

Background and relevance of the study:
Interns come from different medical schools which place varying levels of emphasis on skill development/assessment. A dominant assumption is that trainees are ready for transitioning and where gaps might exist, layers of supervision will compensate. This may lead to a mismatch between program directors' expectations and intern skills[1] as well as contribute to the existence of the "July Effect"[2].

Design and Methods:
Interns (n= 56) from six specialties were assessed on patient safety-related EPAs at five stations. Simulated patients and 25 faculty observers completed electronic checklists and faculty provided formative feedback following each encounter. Encounters were video-recorded.

Results:
The highest performing station was "Informed Consent" while "Handoff" was the lowest. Using the definition of percentage of total points > 70% for meeting criteria for each station, 12.5% (7/56 interns) met criteria for all stations; 28.7% had one station, 37.6% had two station, 10.7% had three stations and 10.7 % had four stations not meeting criteria. All interns indicated the value of immediate feedback.

Conclusions:
The OSCE provides a standardized approach for assessing patient-safety related EPAs. Early identification of performance gaps informs individualized learning plans as well as program/institutional curricular development. While the experience was well received by the interns and faculty, considerable planning and resources are required.
The EPA-based OSCE format during orientation was successfully implemented for interns entering six training programs and could be extended across the institution. Time must be allocated, core faculty must be available to participate, and institutional financial backing is necessary.

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Regional Variation Across the United States in Resident Self-Assessment as Compared to their Peers using ACGME Competencies

Authors:

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Abstract Body:

Research Statement/Research Question:

The purpose of this study is to analyze how first-year medical residents from a private midwestern institution self-assess their performance based on ACGME competencies completing residency in different AAMC-defined regions.

Background and relevance of the study:

Regional variation exists in healthcare treatments in the United States based on physician beliefs and patient preferences.[1] As medical education relies heavily on training by physicians, some beliefs and preferences may transfer to the student. It could be beneficial for a residency program director to understand the regional differences resulting from a resident's medical education to best support and train a geographically diverse cohort of residents.[2]

Design and Methods:

Four hundred first-year medical residents voluntarily completed a medical school graduate follow-up survey which compared their self-reported ACGME competency performance to their peers using Likert-scale items (scale: 1=substantially below average/5=substantially above average). The 2009-2018 graduates were categorized using the AAMC-defined regional groups where they are completing their residency: Northeast(N=35), South(N=52), Central(N=239), and West(N=74).

An analysis of variance and Cohen's d effect sizes determined statistically significant mean differences in competency performance between AAMC-define groups. Pearson correlations reported relational strength between competencies. IBM® SPSS® 24.0 generated statistical analysis.

Results:

Graduates reported significantly ($p < 0.050$) different responses between regions in professionalism (alpha=0.96) and systems-based practice (alpha=0.93). Graduates completing their residency in the South rated themselves significantly higher than graduates completing their residency in the Midwest in professionalism ($d=0.56$, $p < .001$) and systems-based practice ($d=0.56$, $p < .001$). There was a significant correlation between professionalism and systems-based practice ($r=0.570$, $p < .001$).

Conclusions:

These findings provide analytical evidence that graduates completing their residency program in the South rated themselves significantly higher in the areas of professionalism and systems-based

practice than those in the Central region from which they graduated. Spending one year after graduation in a different AAMC-defined region provides a new appreciation of medical school education.

References:
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Student Perspectives on Co-curricular Programs

Submission Type: Research Abstract
Accepted as: Poster

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Abstract Body:

Research Statement/Research Question:

Our study aims to investigate students' experiences with co-curricular programs, scholarly programs supplementary to the regular curriculum that span all four years of medical school, using the case of the University of Illinois College of Medicine at Chicago(UICOM) [1].

Background and relevance of the study:

Co-curricular programs are an increasingly common feature of U.S. medical institutions; indeed, 74% of the top 43 ranked U.S. medical schools have co-curricular programs. These programs attract students who wish to engage in specific areas of medicine, most commonly global medicine[2]. Co-curricular programs aim to facilitate a student's self-directed learning, career development, and leadership ability in those areas. Moreover, they increase the likelihood of matching into a residency program with an aligned mission[3]. However, few published studies have investigated student perspectives on co-curricular programs and their effectiveness.

Design and Methods:

We organized focus groups with M2s for each of UICOM's four co-curricular programs during which we asked students to reflect on the efficacy of their program, initial expectations, and reasons for joining. Afterwards, we used qualitative phenomenological methods to identify common themes in our transcripts.

Results:

Overall, our participants feel that they are benefiting from co-curricular programs. Essential elements for student satisfaction included: 1) presentations from experts in the field, 2) relevant skill-building workshops, and most importantly 3) early access to physician mentors to guide them in executing self-driven research projects. Didactic lectures, excessive time requirements, restrictive research projects, and a lack of clear practical applications for skills should be avoided. Notably, students indicated that residency competitiveness was not their primary motivation for joining their programs.

Conclusions:

Co-curricular programs must strike a balance between guidance and flexibility to allow students to pursue projects outside of the standard curriculum. Failure to do so can prevent learning or cause students to disengage. Future research will expand to include M4s who have completed their co-curricular programs.

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The Association between Engagement in an Online Clinical Reasoning Training System and Performance on a Subsequent Clinical Performance Exam

Submission Type: Research Abstract
Accepted as: Oral Abstract Presentation

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Abstract Body:

Research Statement/Research Question:
Is engagement in an online clinical reasoning training system associated with scores on subsequent clinical performance exams?

Background and relevance of the study:
In 2017, our medical school launched an online training system designed to offer deliberate practice on reasoning clinically through 12 chief complaints.[1] Completion of the training is required, but there is otherwise no monitoring of student activity. Students' conscientiousness and cognitive investment, both associated with academic achievement, may be important to achieving the expected benefit of this largely self-directed learning opportunity.[2-3]

Design and Methods:
Using a locally developed rubric, training system data were rated for conscientiousness (e.g., timing of case completion, completion of optional self-assessments) and cognitive investment (i.e., rigor of engagement in required reasoning exercises). In an extreme groups design, data came from three cohorts of students who passed all 14 cases on our summative clinical competency exam (SCCX) (N = 31) and who failed the exam (i.e., passed fewer than 10 cases) (N = 33). Raters were two medical education faculty, two nurse educators, and one clinical faculty member, all blind to the students' identities and SCCX pass/fail status.

Results:
Two students did not complete any of the required cases, and both failed the SCCX. Of two students who partially completed the required cases, one failed the SCCX and one passed all 14 cases. Initial results [5 students (60 online cases)] indicate an association between student engagement in the training system and SCCX pass/fail status: On average, students passing all 14 cases of the SCCX achieved a 79% engagement score and students failing the SCCX received a 57%. Engagement differences between the highest and lowest-scoring students on the SCCX were greater for cognitive investment than for conscientiousness (82% vs. 52% and 76% vs. 67%, respectively).

Conclusions:

Engagement, particularly cognitive investment, appears to influence the value of this self-directed online training system to developing clinical performance.

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The Impact of First-Year Medical School Student's Lecture Attendance on Course Evaluation Outcomes

Submission Type: Research Abstract
Accepted as: Poster

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Abstract Body:

Research Statement/Research Question:
The purpose of this study is to analyze medical student course evaluation responses based on didactic lecture attendance.

Background and relevance of the study:
Decreasing lecture attendance in medical school has been driven by curricular and technological changes. Faculty perceive live lecture as beneficial, but students report a desire for alternative learning[1] to achieve better perforamnce[2]. Understanding student's preferences concerning lecture can drive curriculum planning and faculty development, leading to more effective student learning.[3]

Design and Methods:
In 2018-19, 258 first-year medical students completed an end-of-course evaluation following each basic science course. Lecture attendance was self-reported using low (< 30% attendance), moderate (30%-60%), and high (>60%) groups.

A Kruskal-Wallis ANOVA and Cliff's d effect size determined statistically significant median differences. Spearman correlations reported relational strength between items. IBM® SPSS® 24.0 generated statistical analysis.

Results:
Students reported statistically significant ($p < 0.050$) median differences in self-reported items based on lecture attendance to four Likert-scale items: Q1-Q3 (scale: 1=strongly disagree/6=strongly agree) and an overall item (scale: 1=unsatisfactory/5=outstanding).
Q1. Classroom sessions enhanced my understanding of course content.
Q2. Small group sessions, labs, and clinical/case-based sessions enhanced my ability to apply course content.
Q3. Examinations covered major information from the lectures and other required course activities.
Overall impression of the course.
Students with moderate lecture attendance reported significantly ($p < 0.050$) higher scores in (Q1:d=0.21, Q2:d=0.58, Q3:d=0.21, Overall: d=0.21) compared to the low attendance and in (Q3: d=0.10; Overall: d=0.12) compared to high attendance.
The inter-item reliability of items Q1-Q3 was alpha=0.72 with inter-item correlations ranging from r=0.47-0.55. The overall item was significantly ($p < 0.001$) correlated to Q1(r=0.66), Q2(r=0.51), and Q3(0.62).

Conclusions:

Moderate levels of student attendance results in the best overall student impression of basic science courses and the perspective that examinations covered major information from the lectures. This suggests that current courses be designed with a smaller contribution of traditional lecture material.

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The Impact of Learning Culture on Student USMLE Step 1 Preparation: A Qualitative study

Submission Type: Research Abstract
Accepted as: Oral Abstract Presentation

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Abstract Body:

Research Statement/Research Question:
How do students perceive the learning environment, mental well-being, and administrative/faculty support before and after USMLE Step 1?

Background and relevance of the study:
Previous research has demonstrated the relationship between learning environment, mental well-being and student cohesiveness on exam performance by measuring these relationships quantitatively[1–4]. While these studies highlight these relationships exist, they do not describe the mechanisms through which they impact students. In contrast, our study aims to explore how the learning environment, well-being, and student cohesiveness impact exam performance using qualitative interviewing methods.

Design and Methods:
Using the University of Illinois College of Medicine as the research site, we conducted seven 20-30 minute interviews with five total participants both before and after taking the exam. Interviews were coded by the research team using both a priori and emergent codes. Framework analysis was used to identify common themes among interviews[5].

Results:
Three main themes were identified from these interviews: social isolation as a form of protection from anxiety, common coping strategies to promote mental well-being, and importance of faculty attitudes. Several students described removing themselves from their existing social circles or studying apart from other students to avoid comparison. Consistent with prior literature, students commonly utilized exercise and time for loved ones and hobbies, as coping strategies. Finally, students noted some faculty communicated encouraging messages and realistic expectations, easing anxiety, while others de-emphasized exam importance, leaving some with a false sense of security.

Conclusions:
Anxiety is a commonly identified theme among students preparing to take the exam. We discovered that when some students look for mechanisms to cope with anxiety, they may socially isolate themselves to counter the fear of failing to meet expectations. Furthermore, messaging

from faculty and advisors can alter the way students process their results after the exam and influence who students look to for support. Advisors may target these areas to improve the exam experience.

References:
1. Wayne SJ, Fortner SA, Kitzes JA, et al. Cause or effect ? The relationship between student perception of the medical school learning environment and academic performance on USMLE Step 1 Cause or effect ? The relationship between student perception of the medical school learning environment and academic performance on USMLE Step 1. 2013. DOI:10.3109/0142159X.2013.769678.
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The Impact of Stress and Personality on Faculty Resilience as Mediated by Character Strengths and Reflexivity

Authors:
Robert Treat, Medical College of Wisconsin
Kristina Kaljo, Medical College of Wisconsin
Jennifer Apps, Medical College of Wisconsin
Bipin Thapa, Medical College of Wisconsin
Kerrie Quirk, Medical College of Wisconsin

Abstract Body:

Research Statement/Research Question:
The purpose of this study is to analyze the relationship of medical school faculty resilience as impacted by perceived levels of stress and personality and mediated by character strengths and reflexivity.

Background and relevance of the study:
Academic faculty require resilience to persevere through many professional challenges of teaching, scholarship, and clinical duties. Successful achievement of these ongoing demands requires the capacity to persevere when stress levels rise.[1] Personal characteristics can mediate the effects of stress[2] on resilience. Faculty who engage in reflexivity or self-evaluation of actions, can persevere and be resilient due to an ability to problem-solve when challenges arise.[3]

Design and Methods:
In March 2018, twenty faculty were interviewed in person or on the phone at a private Midwestern medical college for thirty minutes about sources of stress that impacted their resilience. Faculty completed these surveys: Perceived Stress Survey, Values in Action Inventory of Strengths (VIA-IS), and the Five-Factor Personality Inventory (IPIP-5-50). Survey data analyzed with IBM® SPSS® 24.0. Focus group transcriptions analyzed with NVivo 11. This study is IRB approved.

Results:
Faculty resilience (alpha=0.8) was significantly ($p \leq 0.050$) correlated to stress (r=-0.6), conscientiousness (0.5), neuroticism (-0.4), courage(0.7), transcendence (0.6), and justice (0.5). A significant linear regression model of resilience (outcome) on stress (R^2=0.31, p<.001) was mediated separately by the character strengths of courage (beta=0.7), transcendence (0.6) and justice (0.5).

A significant linear regression model of resilience (outcome) on four factors of personality (openness, conscientiousness, agreeableness, and neuroticism) (R^2=0.58, p<.001) reported that the character strength of courage mediated (beta=0.7) all four significant predictors. Transcendence mediated (beta=0.5) openness, agreeableness, and neuroticism
Focus groups reported that reflexivity helps mitigate stress, but if thoughts turn to rumination, it can backfire and compromise resilience. Mediating factors include maintaining perspective, empowerment, and having work-life boundaries.

Conclusions:
Character strengths and reflexivity mediate the effects of stress and personality on resilience.

References:
1. Willis KD, Burnett HJ, The Power of Stress: Perceived Stress and its Relationship with Rumination, Self-Concept Clarity, and Resilience, North American Journal of Psychology 2016:18(3);483-498.
2. Martinez-Marti ML, Ruch W, Character Strengths Predict Resilience Over and Above Positive Affect, Self-Efficacy, Optimism, Social Support, Self-Esteem, and Life Satisfaction, The Journal of Positive Psychology 2017;12(2):110-119.
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The Rise of Physician Wellness Topics at the CGEA Meeting

Submission Type: Research Abstract
Accepted as: Poster

Authors:
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Sharon Fitzgerald, University of Kansas School of Medicine
Kelli Krase, University of Kansas School of Medicine

Abstract Body:

Research Statement/Research Question:
How has the proportion of wellness topics represented at AAMC CGEA meetings changed over the past 10 years?

Background and relevance of the study:
Physician wellness is an important topic that has received increased recognition in recent years. As professional demands often take priority over personal needs in the lives of training and practicing doctors, maintaining physical and psychological wellbeing can be a significant challenge. Growing recognition of the need to promote wellness and prevent burnout among physicians may be reflected by increased representation of related topics at regional medical conferences.

Design and Methods:
We reviewed all conference events from the AAMC CGEA meetings dating from 2010-2019. Events related to physician wellness or burnout were then separated by category (wellness session, poster presentation, oral presentation, workshop/breakout session, or keynote speaker). These wellness/burnout events were compared to the total number of events within each category as well as within each conference as a whole. These values were then displayed as graphs.

Results:
Our analysis indicates no clear pattern in the representation of wellness topics at the AAMC CGEA meetings from 2010-2019. The conferences in 2010, 2013, and 2017 appear to include the highest proportion of wellness topics, with 2012 and 2014 including the lowest.

Conclusions:
In the setting of rising emphasis on physician wellness, the proportion of related topics discussed at AAMC CGEA meetings does not appear to mirror this trend in a predictable pattern. Additional investigation is needed to more fully address how physician wellness is represented among medical organizations.

References:
CGEA Meeting Programs, 2010-2019.
Blackwelder R, Hood Watson K, Freedy JR (2016) Physician Wellness Across the Professional Spectrum. Prim Care 43(2): 355-361.
Eckleberry-Hunt J, Kirkpatrick H, Taku K, Hunt R (2017) Self-Report Study of Predictors of Physician Wellness, Burnout, and Quality of Patient Care. South Med J 110(4): 244-248.

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Using A Modified Delphi Method to Reach Consensus on Best Practices for Abstract Resubmissions to Multiple Medical Education Conferences

Submission Type: Research Abstract
Accepted as: Poster

Authors:
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Nicole Borges, Dartmouth Geisel School of Medicine
Nikki Zaidi, University of Michigan

Abstract Body:
Research Statement/Research Question:
What are conference organizers' perspectives for best practices for abstract resubmissions to medical education conferences?

Background and relevance of the study:
Medical education researchers are often uncertain whether they should resubmit abstracts to multiple conferences. While it is important to adhere to ethical practices and professional etiquette, best practices for conference resubmissions remain elusive. To establish clear guidelines for best practices, sufficient information must be collected and disseminated among the medical education research community.

Design and Methods:
Using a 50-question online survey, we conducted a modified Delphi process to identify best practices for abstract submissions to medical education conferences. We recruited conference representatives from non-specialty-medical education conferences across four conference types (institutional, regional, national, and international) to serve as panelists for two rounds of the online survey. Responses were summarized (percent agreement and rationale) and shared in an effort to reach consensus (>80% agreement) across survey items. Items reaching consensus in Round 1 were eliminated from the Round 2 survey; panelists were asked to reconsider their responses based on majority responses or provide additional rationale if remaining outside the majority.

Results:
Eleven panelists, representing all four conference types, participated. Panelists reached consensus that all conferences should require IRB approval for research involving human subjects and attestations that all authors meet ICMJE authorship criteria. Panelists also reached consensus that previously submitted and accepted abstracts could be resubmitted to any other conference type. Consensus indicated that abstracts presented at institutional, national, and international conferences could be resubmitted to any of these three conference types; however, consensus was not reached regarding resubmission of abstracts previously presented at national or international conferences to regional conferences. Likewise, consensus was not reached on whether an abstract could be submitted using data and results currently under review or accepted for publication.

Conclusions:

Our findings will provide direction regarding best practices for medical education abstract submissions.

References:

Hsu CC, B. Sandford BA. The Delphi Technique: Making Sense of Consensus. Practical Assessment Research & Evaluation, 2007;12:1-8.

Waggoner J, Carline JD, Durning SJ. Is There a Consensus on Consensus Methodology? Descriptions and Recommendations for Future Consensus Research. Academic Medicine. 2016; 91:663-8

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Using CBSE Scores and Dedicated Study Time as Predictors for Medical Student Performance on USMLE Step 1

Authors:
Christopher McCoy, Wright State University Boonshoft School of Medicine
Amber Todd, Wright State University Boonshoft School of Medicine

Abstract Body:

Research Statement/Research Question:
What is the correlation between CBSE score and student performance on USMLE Step 1, and how does CBSE score and length of dedicated self-study time impact student performance on Step 1?

Background and relevance of the study:
The United States Medical Licensing Examination Step 1 has increasingly become the center of attention since students with a higher score are more likely to match into competitive specialties [1-4]. The National Board of Medical Examiners Comprehensive Basic Science Examination (CBSE) is a standardized exam used by multiple medical schools to assess student readiness to take Step 1. CBSE and Step 1 scores have been correlated at other schools[5]; we investigated how CBSE scores and length of dedicated study time impact our students' Step 1 scores.

Design and Methods:
We obtained CBSE score, Step 1 score, and length of time (days) between CBSE administration and Step 1 test date for students in graduating 2017-2021 cohorts from the Boonshoft School of Medicine (n=521).

We used a Spearman correlation to determine the strength of the correlation between CBSE and Step 1 scores and stepwise linear regression to determine the predictive value of CBSE scores and length of time between CBSE and Step 1.

Results:
CBSE scores were significantly correlated with Step 1 score ($r=0.858$, $p<0.001$). CBSE score and length of time between CBSE and Step 1 accounted for 71.1% of the variance in Step 1 score. For every one-point increase in CBSE score, a student's Step 1 score increased by 1.535 points ($p<0.001$); for every day increase between the CBSE and Step 1, a student's Step 1 score decreased by 0.072 points ($p=0.001$).

Conclusions:
Our results support the use of the CBSE to determine student readiness for Step 1. Our results indicate students should take Step 1 when they are ready; increased study time beyond what is needed to pass will not yield higher scores.

References:
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Using Social Cognitive Career Theory to Evaluate the Development of Educator Identity in Clinician-Educator Trainees

Submission Type: Research Abstract
Accepted as: Oral Abstract Presentation

Authors:
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Kyle Robertson, Indiana University School of Medicine
Christen Dilly, Indiana University School of Medicine

Abstract Body:

Research Statement/Research Question:

This study examined the professional identity formation (PIF) of trainees in a clinician-educator (CE) training pathway to understand the influences that support the development of an educator identity.

Background and relevance of the study:

Many future CE's experience tension between their identities as clinicians and their roles as educators. Educational programs build trainees' knowledge and skills, but they must also assist in the formation of a professional identity that will encourage self-efficacy, confidence, and full engagement with their communities of practice.[1] Training pathways for CEs should incorporate elements to support professional identity formation (PIF) as educators.[2] However, it is not known which elements are effective in supporting PIF in aspiring educators.

Design and Methods:

Eight Department of Medicine residents and fellows selected for the CE Training Pathway (CETP) at Indiana University School of Medicine agreed to participate. Participants took part in three semi-structured interviews across the first year of the pathway. Interview transcripts were analyzed using Social Cognitive Career Theory (SCCT)[3] as a conceptual framework to explore self-efficacy, outcome expectations, and PIF as educators.

Results:

Most participants did not identify as educators at the beginning of the study but all had goals to become better educators and understand CE career pathways, and they aspired to become clinical educators in some capacity. Self-efficacy was developed through formal learning experiences within the pathway by gaining knowledge of educational theory, belonging to a community of educators, and conducting educational scholarship. Engaging with CE role models encouraged self-efficacy by demonstrating rewarding career pathways. Participants enhanced their own self-efficacy by seeking opportunities to act as an educator, practicing skills they learned within the pathway, and reflecting on teaching effectiveness.

Conclusions:

With exposure to role models, feedback on teaching, and engaging in scholarship, the participants began to build self-efficacy and identity as educators.

References:
1. Bartle E, Thistlethwaite J. Becoming a medical educator: motivation, socialisation and navigation. BMC Med Educ. 2014;14:110.
2. Sabel E, Archer J. "Medical education is the ugly duckling of the medical world" and other challenges to medical educators' identity construction: a qualitative study. Acad Med. 2014;89(11):1474-1480.
3. Lent RW, Brown SD, Hackett G. Career development from a social cognitive perspective. In Brown D, Brooks L., Eds. Career Choice and Development. San Francisco: Wiley Publishers; 1996:373-421.

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Small Group Discussion, Workshops and Panel Discussion Abstracts

"It's Tool Time!" A New Instructional Design Tool for Curriculum Mapping

Authors:
Lindsey Allison, Wright State University Boonshoft School of Medicine
Linda Love, University of Nebraska Medical Center
Max Anderson, University of Illinois College of Medicine

Abstract Body:
Rationale:
The Liaison Committee on Medical Education (LCME) requires that all allopathic medical schools define their program objectives in "outcome-based terms" (LCME Element 6.1). One way that medical schools can ensure they are reviewing their program objectives (also required by the LCME within Element 8.4) is to participate in the annual AAMC Curriculum Inventory (CI). Implementing measurable program objectives, using an instructional design tool, based on the Understanding by Design (UbD)[1, 2] framework and L. Dee Fink's backward design strategies[3], is key to ensuring schools can adequately assess that both the students and the program are meeting these program objectives. Through purposeful backward design and curriculum mapping, CI data becomes more effective. The aim of this workshop is to give participants a tool that will allow them to map their school's objectives, learning events, and assessments for every course in their curriculum. Creating a streamlined approach for the backward design process and in turn ensuring program outcomes are being met through course content and assessment measures.

Learning Objectives:
- Describe the UbD framework and L. Dee Fink's backward design strategies and these relate to CI.
- Recognize the importance of instructional design tools to ensure program outcomes are being met.
- Demonstrate how an instructional design tool can assist with CI.

Session Methods and Format:
[20 minutes] Brief introductions from the workshop facilitators and:
- Explain how L. Dee Fink's backward design strategies
- Brief overview of development of and how to use the UbD instructional design tool
- Explain how all of this relates to AAMC CI

[30 minutes] At each table, participants will be provided with a partially completed UbD template.
- Participants will spend the first 20 minutes working through the alignment of the various tables within the document
- The remaining 10 minutes will be spent as a group talking through the completed document, focusing on any objectives that were not matched and how this would affect CI.

[30 minutes] Each table will be asked to brainstorm how this template could be useful for CI at their institution and any barriers they face with implementation.

- o Each table will have 15 minutes to brainstorm on large post-it's how to use this template at their institution. Being sure to consider the roles of faculty and staff in the process of completion of the template, implementation concerns, and review of the curriculum inventory.
- o Remaining 15 minutes will be spent reviewing the various groups processes for completion, implementation, and concerns.

[10 minutes] Wrap-up and questions

Experience:

Lindsey Allison, MEd.: Manager of Curriculum Development (9 years at Wright State)

Linda Love, EdD: Director of Faculty Development (15 years at University of Nebraska)

Max Anderson, MLIS, MS: Director of Instructional Design and Learning Innovation (6 years at University of Illinois College of Medicine)

References:
1. Wiggins, G., McTigh, J. (2012). The understanding by design guide to creating high-quality units. Alexandria, VA: ASCD.
2. Wiggins, G., McTigh, J. (2012). The understanding by design guide to advanced concepts in creating and reviewing units. Alexandria, VA: ASCD.
3. Fink, D. L. (2003). The self-directed guide to designing courses for significant learning. San Francisco, CA: Jossey-Bass. Retrieved from: https://www.deefinkandassociates.com/GuidetoCourseDesignAug05.pdf

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A Framework for Longitudinal Professionalism Development: A Balanced Approach

Authors:
Michael Busha, Western Michigan University Homer Stryker MD School of Medicine

Abstract Body:

Rationale:
The development of professionalism characteristics among a diverse medical student population is often frustrating as the domain encompasses a broad range of ideal behaviors with career-long consequences when not integrated into our learner's daily habits. Management of professionalism expectations for students and the assets required to intervene when expectations are not met is often resource exhaustive. Remediation, particularly for professionalism concerns, can significantly frustrate faculty and clinical staff. Intervention attempts are often met with defensive and/or aggressive responses which further frustrate and exhaust resources. A standard framework that aligns with the defined developmental pathway provides comforts of structure and standard process. This structure and process can foster confidence within faculty that promotes student development and protection of relationships within the clinical learning environment.

Learning Objectives:
1) Lead the development of a standardized professionalism curriculum with a defined developmental pathway
2) Discuss methods for tracking and creating a culture of accountability with the domain.
3) Initiate a standardized approach to resource process management and utilization for students needing remediations in the domain of professionalism.

Session Methods and Format:
This small group discussion will be divided into two segments.
1) The first segment will present a longitudinal approach to setting developmentally appropriate professionalism expectations
   - Creating a longitudinal view of commendations and concerns
   - Tracking student progress through each course/clerkship
   - Review strategies for standardizing formative and summative determinations for inclusion in permanent student records and the MSPE.
   (15-minute overview)
   (10 minutes of directed small group discussions with report-out examples.)

2) The second segment will focus on standardization of resource management in areas of professionalism development.
   (10-minute overview)
   (10-minute open group discussion)

Experience:
Dr. Busha's experience in UME includes leadership positions in regional campus development

for clerkship integration, academic advising, professionalism remediation through the Student Performance Committee, management of student sanctions and dismissal, and directing foundations clinical skills development; relevant GME experience includes serving as a program director for five years.

Dr. Gibson's experience includes prior roles as scholar advisor and clerkship director for Pediatrics, developing foundations clinical skills and professionalism curriculum, leading school curriculum development and management for IPE and oversight of clinical applications portion of curriculum including all student remediations

References:
n/a

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A Resident-Led Mentorship Framework for Underrepresented Minority Medical Students: The STRIVE Initiative

Submission Type: Workshops
Accepted as: Workshops

Authors:
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Jennifer Adrissi, Northwestern University Feinberg School of Medicine
Adesuwa Akhetuamhen, Northwestern University, Feinberg School of Medicine
Mateus Lima, Northwestern University, Feinberg School of Medicine
Ramael Ohiomoba, Northwestern University, Feinberg School of Medicine
Aashish Didwania, Northwestern University, Feinberg School of Medicine
Diane Wayne, Northwestern University, Feinberg School of Medicine
Linda Suleiman, Northwestern University, Feinberg School of Medicine

Abstract Body:
Rationale:
Preparing medical students for the rigors of residency is a challenge. The transition for underrepresented minority (URM) medical students can be particularly difficult as they report facing lack of support, discrimination, and lack of cultural representation during medical school. Challenges persist in residency as URM residents note grappling with microaggressions and bias, feeling pressure to be ambassadors for their race, and trouble negotiating professional and personal identity. In this regard, URM graduate medical trainees are uniquely equipped to prepare URM medical students for the residency experience. Student to Resident Institutional Vehicle for Excellence (STRIVE) is an initiative at Northwestern University Feinberg School of Medicine created to meet this need. The initiative provides academic, social, and professional support while preparing students for the unique obstacles experienced during training. There are three pillars of programming: panel discussions, medical school curriculum review sessions, and social events. The program has been evaluated by participation rates and a mentor survey. Over the past three years, 32 URM graduate medical trainees have participated in mentoring events for URM medical students at Feinberg. At this workshop, participants will explore the unique challenges evident in the transition from medical school to residency for URM trainees. We will discuss how mentorship by more senior peers can effectively mitigate these challenges. Participants will also learn concrete steps for creating a mentorship model at their respective intuitions and explore institution-specific considerations. The purpose of this workshop will be to build a mentorship framework that can be adopted to help address this important subset of medical student transitions.

Learning Objectives:
1. Review the unique training considerations for URM trainees
2. Define the role of senior peer mentorship in preparing medical students for residency
3. Learn concrete steps for implementing a sustainable mentorship model for URM trainees

Session Methods and Format:
Section (Time in minutes):
Introduction and Background (10)
Small Group: Challenges of Training for URMs (10)

Large Group Debrief (5)
The Case for Mentorship (5)
Student to Resident Institutional Vehicle for Excellence (25)
Small Group: Plan for Mentorship in your Program (15)
Large Group Debrief (10)
Questions/Comments (10)

Experience:
Quentin Youmans, MD: Founded the mentorship program Student to Resident Institutional Vehicle for Excellence (STRIVE).
Jennifer Adrissi, MD: Serves as the current President of STRIVE.
Adesuwa Akhetuamhen, MD: Serves as the current Vice President of STRIVE.
Mateus Lima: Participates as a medical student mentee in STRIVE.
Ramael Ohiomoba: Participates as a medical student mentee in STRIVE.
Aashish Didwania, MD: Serves as a faculty sponsor for STRIVE.
Diane Wayne, MD: Serves as faculty sponsor for STRIVE.
Linda Suleiman, MD: Serves as the faculty advisor for STRIVE, Director of Diversity and Inclusion at McGaw Medical Center.

References:
N/A
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Addressing LCME Standard 6.3 in the Pre-clerkship Years

Authors:
Jack Kopechek, The Ohio State University College of Medicine
Douglas Danforth, The Ohio State University College of Medicine
Jennifer McCallister, The Ohio State University College of Medicine

Abstract Body:
Rationale:
Self-directed and Lifelong Learning skills are essential for developing and maintaining clinical excellence. LCME Standard 6.3 states that the faculty of a medical school must ensure that the medical curriculum includes self-directed learning experiences and unscheduled time to allow medical students to develop the skills of lifelong learning. Self-directed learning involves medical students' self-assessment of learning needs; independent identification, analysis, and synthesis of relevant information; appraisal of the credibility of information sources; and feedback on these skills. Integrating instruction and assessment of self-directed learning skills is a challenge for many medical school curricula especially during the pre-clerkship years.

Learning Objectives:
1. Compare and contrast the teaching and assessment of self-directed learning skills among various medical school pre-clerkship curricula.
2. Describe how self-directed learning is fostered at The Ohio State University College of Medicine during the pre-clerkship years.
3. Identify some best practices for teaching and assessing self-directed learning skills in the pre-clinical years.

Session Methods and Format:
The session will alternate between small group discussions at each table, reporting out to the large group, and the sharing of experiences and insights from the presenters. Jack Kopechek will moderate the table discussions and report outs.
- Presentation- Overview of LCME standard 6.3/why this is important aspect of the curriculum- Jennifer McCallister (5 minutes)
- Table Discussion- Which elements of this standard are most easily taught and assessed during the pre-clerkship years? What methods have been most effective (3 minutes)
- Report out- (2 minutes)
- Table discussions- Which elements of this standard are most challenging to address in the pre-clerkship years? What are the barriers to teaching and assessing these skills during these years? (3 minutes)
- Report out- (2 minutes)
- Presentation- Teaching and Assessment of Self-directed Learning Skills at The Ohio State University College of Medicine- Doug Danforth and Jack Kopechek (15 minutes)
- Large group questions and comments- (5 minutes)

- Table Discussion- Based on today's discussion, what teaching or assessment practices hold the most promise for meeting the LCME 6.3 standard? What changes do you want to consider in your pre-clerkship curricula to better address this standard (5 minutes)
- Report out/Summary- (3 minutes)

Experience:
Jack Kopechek MD, Director of Competency; Practice-based Learning and Improvement, The Ohio State University College of Medicine
Doug Danforth PhD, Director of the Pre-clerkship Curriculum, The Ohio State University College of Medicine
Jennifer McCallister MD, Associate Dean of Medical Education, The Ohio State University College of Medicine

References:
https://lcme.org/publications
https://www.ncbi.nlm.nih.gov/pubmed/23807109

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EPA Aligned Patient Discharge Education Workshop

Submission Type: Workshops
Accepted as: Workshops

Authors:
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Ananya Gangopadhyaya, University of Illinois College of Medicine
Yoon Soo Park, University of Illinois College of Medicine
Ana Clara Mauro, University of Illinois College of Medicine
Susan Doh, University of Illinois College of Medicine

Abstract Body:
Rationale:
Hospital discharge is a pivotal time point in patient safety and care.[1,2,3,4,5] There are limited formal curricula instructing medical students about patient discharge in the literature.[7,8,9,10,11,12,13] Some reports show that only 56% of medical students have reviewed discharge instructions with patients, and 96% desire additional training in the discharge process.[6]

Participation in a curriculum tailored to improve medical students' skills, attitudes and knowledge of safe discharge practices can have a meaningful impact on discharging patients safely during residency. The AAMC's 13 core "Entrustable Professional Activities" (EPAs)[14] has several EPA's that encompasses higher-order synthesis of all the skills and competencies required during hospital discharge. We propose that a patient discharge curriculum should be guided by these EPA's and require students to demonstrate readiness for discharging patients as they begin residency.

The overarching goal of the workshop is to provide a skill-oriented interactive experience, where participants learn about our a) discharge curriculum for medical students and b) instruments which provide students feedback about their demonstration of entrustable professional activities during patient discharge.

Learning Objectives:
- o Describe the goals and content of discharge curriculum, including key aspects of the discharge process that medical students should master prior to internship
- o Review instruments used to assess student readiness for discharging hospitalized patients using EPA language
- o Identify potential implementation challenges for the patient discharge curriculum

Session Methods and Format:
5 minutes: Introduction of topic by facilitator
25 minutes: Goals and content
      small group 10m
      large group discussion 10m
      facilitator summarizes best practices 5m
50 minutes: Walk Through of the Curriculum

participants will fill out EPA-aligned pre curriculum survey and view instructional video on discharge: 5m

participants will engage in the discharge observation tool activity 15m

participants will engage in a mock post discharge patient phone call activity 10m

facilitators will share patient discharge presentation and video of debrief session with students 10m

facilitators lead discussion regarding strengths and weaknesses and barriers to implementation of discharge curriculum: 10m

10 minutes: Facilitator led summary of key points of curriculum

Experience:

Radhika Sreedhar, MD, MS. is the Director of Clinical Integration and an assistant clerkship director for the M4 sub-internship in internal medicine.

Asra Khan MD., is a Course director for the Doctoring & Clinical Skills longitudinal course, and is the clerkship director for the M3 Medicine rotation and M4 sub-internship in internal medicine.

Ananya Gangopadhyaya MD., is a Course director for the Doctoring & Clinical Skills longitudinal course, and assistant clerkship director for the M4 sub-internship in internal medicine.

Yoon Soo Park, PhD, is the associate head of the Department of Medical Education and Director of Research, Office of Educational Affairs at the University of Illinois College of Medicine.

Ana Clara Mauro, MD, MPH, is a fourth year resident in Internal Medicine-Pediatrics with a background in caregiver research and an interest in medical education since completion of medical school

Susan Doh BA, is a medical student at the University of Illinois at Chicago College of Medicine (IMED) currently doing a research year to focus on innovative curricular approaches to medical student education.

References:
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Finding Ways to Make Learners Matter: A Design-Thinking Approach to the Learning Environment

Authors:
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Rana Higgins, Medical College of Wisconsin
Alexandria Lutley, Medical College of Wisconsin
Caitlin Patten, Medical College of Wisconsin
Sandra Pfister, Medical College of Wisconsin
Julia Schmitt, Medical College of Wisconsin

Abstract Body:

Rationale:
One of the goals of medical education is to ensure optimal learning through creation of a supportive learning environment (LE). Best practices in creating LEs include development of effective relationships between faculty and learners and supporting effective communication processes.[1] Making the learner feel that they matter results in psychological safety and better learning outcomes[2]. A focus on making learners feel they matter can be transformative. Little is known about what makes learners at various stages feel a part of the team.   Understanding what activities make learners feel they matter can help us design interventions to improve the LE. This workshop will use the first three steps of design thinking, an integrative human-centered method of innovation, to identify strategies that make learners feel they matter . Themes about the topic, obtained during empathy interviews for projects developed through the Kern Institute for the Transformation of Medical Education, will be presented (step one). Small groups of participants (design teams) will each select a theme and create meaningful questions based on the learner's perspective to define opportunities (step two). Participants will brainstorm to generate creative solutions for each theme (step three). Finally, three solutions for each theme will be selected by the original design team and categorized on an impact/effort matrix. In a large group discussion, participants will prioritize strategies and discuss possibilities for implementation, selecting several strategies that may be implemented in their own institution. The completed impact/effort matrix will be distributed to interested participants.

Learning Objectives:
1. Describe the importance of mattering in learning environments.
2. Apply design thinking methodology to define and understand "mattering" from the learner's perspective, brainstorm solutions and prioritize possible interventions.
3. Select at least one intervention that may be applicable at your home institution.

Session Methods and Format:

02 minutes: Introduction   (Open discussion)
10 minutes: Review of mattering and impact on   (Brief didactics)
                  learning environment
10 minutes: Presentation of empathy interview themes   (Interactive presentation)
10 minutes: Completion of design thinking worksheets   (Small group work)
30 minutes: Brainstorming   (Small group work)
08 minutes: Placement on impact/effort matrix   (Small group work)
15 minutes: Identify possible interventions   (Large group work)
05 minutes: Wrap up   (Interactive assessment)

Experience:

Karen Marcdante is an award-winning medical educator with 30 years' experience teaching, administering and presenting and a passion for developing learners to be their best.

Rana Higgins is an award-winning teacher and Associate Residency Program Director striving to improve the learning environment.

Alexandria Lutley is passionate about fostering resiliency in her role as Associate Program Director for Pediatric Neurology.

Caitlin Patten is an award-winning teacher and Associate Clerkship Director for Surgery with a goal of creating a positive learning environment.

Sandra Pfister is an MCW Society of Teaching Scholar who has implemented innovative strategies into medical student curriculum as Course Director of Pharmacology and Toxicology.

Julia Schmitt is the program manager of human-centered design and entrepreneurial-minded learning at the Kern Institute for the Transformation of Medical Education, coaching more than 75 teams through innovation projects.

References:
1. The best practice clinical learning environment framework. State of Victoria, Department of Health and Human Services, 2016 http://www.darcyassociates.com.au
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Helping the Helpers: Empowering Families and Partners to Prevent Medical Student Burnout

Submission Type: Small Group Discussions
Accepted as: Small Group Discussions

Authors:
Eran Magen, Center for Supportive Relationships
Jeffrey Cannon, Case Western Reserve University School of Medicine
Kim Gilliam, Wright
Laura Malosh, University of Cincinnati College of Medicine

Body:
Rationale:
Medical students are at high risk for burnout, isolation, depression and suicide, with a 2016 JAMA meta-analysis estimating the prevalence of depressive symptoms at 27.2% and suicidal ideation at 11.1%. Students' relationships with their loved ones are an important protective factor against suicide, and yet most training programs do not offer any resources to help families and loved ones maintain strong connections to students. In this interactive session, we share the experience of eight medical schools implementing "My MD-to-Be", an innovative program that helps support givers understand, empathize with, and better support medical students. Students select their support givers (typically parents, spouses/partners and friends), who receive emails every 1-2 weeks with educational resources about common medical student experiences, tailored to each school's curriculum. The program is extremely well-accepted by students, with over 90% recommending it for other students. In addition to informing personal support givers, our schools distribute these resources to faculty and staff, in order to improve their connection to the student experience, and consequently their ability to teach and advise effectively.

Following our presentation, we will invite participants to share how their schools include loved ones in providing ongoing support to their medical student. This small group discussion is geared toward medical educators and administrators who seek to learn and share strategies and approaches to preventing medical student burnout.

Learning Objectives:
Participants will (1) Analyze the challenges and importance of maintaining strong personal relationships while in medical school; (2) Compare approaches that different medical schools take to help students maintain strong personal relationships; (3) Identify possible approaches to "borrow" from peer institutions.

Session Methods and Format:
10 minutes: Review of medical student burnout, personal relationships as a protective factor against burnout, and the mechanisms that underlie social support
10 minutes: Review of My MD-to-Be, an innovative program that helps loved ones offer effective support to medical students
10 minutes: Breakout-group discussions (What are challenges associated with helping students stay connected with their loved ones? How does your institution help medical students stay connected with loved ones throughout their training?)
10 minutes: Q&A / Group discussion

5 minutes: Takeaways and closing

Experience:
Eran Magen, PhD, is the founder and CEO of Circles of Support, the former research director of the department of Counseling and Psychological Services at the University of Pennsylvania.

Jeffrey Cannon, MD, is a first year resident in anesthesiology at Cleveland Clinic (Case Western Reserve).

Laura Malosh, PhD, is the Assistant Dean for Student Affairs at the University of Cincinnati College of Medicine.

Kim Gilliam, EdD, is the director of student services at the Wright State University Boonshoft School of Medicine.

References:
Rotenstein LS, Ramos MA, Torre M, et al. Prevalence of Depression, Depressive Symptoms, and Suicidal Ideation Among Medical Students: A Systematic Review and Meta-Analysis. JAMA. 2016;316(21):2214-2236. doi:10.1001/jama.2016.17324.
Thompson G, McBride RB, Hosford CC, Halaas G. Resilience among medical students: The role of coping style and social support. Teach Learn Med. 2016;28(2):174–182.

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Is the Team Playing the Same Game? Generations in the Medical Education Workforce

Authors:
Faye Haggar, University of Nebraska Medical Center
Linda Love, University of Nebraska Medical Center
Gary Beck Dallaghan, University of North Carolina School of Medicine

Abstract Body:
Rationale:
The last few years have brought a wealth of changes to medical education — specifically changes in technology, curriculum, and teaching styles. Managing these changes effectively takes a highly cohesive team — one that moves in the same direction and wants the same things. There's only one problem: the medical education workforce team is not a cohesive one. Never before have 5 generations of professionals been working and learning together. All members of the team must learn to radically empathize with, and appreciate the strengths of, the "other" in order to move beyond their preconceptions and defensive positions. All members would benefit from an enhanced understanding of how the rapid changes in medicine (both the manner in which it is practiced and taught) and trait differences between generations, interact with hierarchical dynamics to impact medical education. Teams need to look beyond differences in attitudes and values, and instead focus on transforming communication styles, work practices, and expectations. This workshop will share best practices for transforming the team in order for all members to excel at playing the same game: the game of teaching.

Learning Objectives:
- Identify the generations found within their teams and describe the traits of the generations
- Discuss the potential impact of these traits on the team/workforce and the learning environment
- Describe at least 1 change they will consider making in order to transform the medical education workforce

Session Methods and Format:
(10 min) Introduction and Background: Addressing why this topic continues is relevant in medical education
(20 min) Activity – Think About Your Team. Worksheet + table discussion has attendees identify the generations within their team and characteristics they notice about each one.
(35 min) Case Studies and Best Practices for Generational Teams in Medical Education
(10 min) Wrap-Up and Questions

Experience:
Dr. Haggar leads GME departmental innovation in the area of design, development and evaluation of curriculum and digital pedagogies that promote engaged, personalized and lifelong learning.

Dr. Love is the director of faculty development at UNMC and works to assure its workforce is ready for the future of medical education.

Dr. Beck Dallaghan co-edited Mind the Gap: Generational Differences in Medical Education and has given numerous presentations related to generational differences in medical education.

References:

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Talmon GA, Beck Dallaghan GL (eds). Mind the Gap: Generational Differences in Medical Education. Syracuse, NY: Gegensatz Press, 2017.

Roberts DH, Newman LR & Schwartzstein RM. Twelve tips for facilitating Millennials' learning, Medical Teacher, 2012; 34:4, 274-278

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Nuts-and-Bolts: Turning Educational Projects into Successful Submissions to MedEdPORTAL

Submission Type: Workshops
Accepted as: Workshops

Authors:
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Julie Broski, University of Kansas School of Medicine
Alex Grieco, Ohio State University College of Medicine

Abstract Body:
Rationale:
MedEdPORTAL, the Journal for Teaching and Learning Resources of the Association of American Medical Colleges, peer reviews and publishes educational resources. Its recent acceptance into MEDLINE for indexing solidified its position as a premier venue for health science educators who teach medical and dental learners and wish to publish and disseminate their educational projects.

Because MedEdPORTAL's publications count toward promotion processes, helping CGEA members understand how to present their educational innovations as scholarship is critical to their career development. The process of submitting to MedEdPORTAL requires an Educational Summary Report (ESR), which is structured like a traditional research manuscript. However, developing a manuscript through the lens of educational scholarship may require more guidance in how the work is presented.

This workshop is designed to provide hands-on experience with evaluating and revising a draft of an ESR to submit to MedEdPORTAL. Participants will be asked to identify a teaching/learning resource potentially submittable to MedEdPORTAL and bring related materials to the conference.

Learning Objectives:
1. Articulate the ways in which the Educational Summary Report (ESR) is similar to a traditional manuscript.
2. Describe each part of the ESR and how well-written components adhere to standards for scholarship.
3. Identify strategies to refine each component of the ESR for a more scholarly product.
4. Develop a personal "to-do" list to prepare a MedEdPORTAL submission.

Session Methods and Format:
Review of the aspects of the ESR and how they are comparable to and differ from traditional research manuscripts. – 15 minutes
Introduce the ESR worksheet (prompting questions that provide guidance for preparing an ESR). Participants will have the opportunity to use the ESR worksheet for an educational project they envision submitting to MedEdPORTAL – 15 minutes
Divide the room into groups to review a pre-workshop ESR solicited in advance. Small groups will assess the quality of each section and identify what could be improved. Workshop facilitators will circulate to answer questions. – 30 minutes

Moderate a large group report-out of feedback on the ESR while a facilitator documents effective principles in writing the ESR. – 15 minutes
Conclude workshop by discussing 1) What is hardest to write? 2) What other resources would be helpful? 3) Other questions?

Experience:
Dr. Alexander Grieco is an assistant professor in The Ohio State University College of Medicine, a member of the MedEdPORTAL Faculty Mentor Program, and associate editor in radiology for MedEdPORTAL.

Dr. Julie Boski is the assistant director of simulation research at the Zamierowski Institute for Experiential Learning at the University of Kansas Medical Center and a member of the MedEdPORTAL Faculty Mentor Program.
Sara Hunt is the managing editor of MedEdPORTAL and directs the Faculty Mentor Program.

<u>**References:**</u>
N/A

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Practical Approaches to Applying Conceptual & Theoretical Frameworks to Medical Education Research: A MESRE Session

Submission Type: Workshops
Accepted as: Workshops

Authors:
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S. Beth Bierer, Cleveland Clinic Lerner College of Medicine of Case Western Reserve
Heeyoung Han, Southern Illinois University School of Medicine
Janet Riddle, University of Illinois College of Medicine

Abstract Body:
Rationale:
Conceptual and theoretical frameworks are critical for conducting high-quality education research, yet many educators struggle to understand how to practically apply them. Lack of an appropriate conceptual framework is a common reason for rejection from medical education journals, thus the purpose of this session is to facilitate the practical application of such frameworks to education research.

Learning Objectives:
At the end of this session, participants will be able to:
1. Describe two theoretical frameworks commonly used in different research paradigms (opening)
2. Examine how the selection of a framework can impact research design (small-group activity)
3. Discuss strategies for framing manuscripts using a conceptual or theoretical framework (closing)

Additionally, participants will leave the session with resources that support the identification and use of conceptual frameworks.

Session Methods and Format:
Social scientists use theories and conceptual frameworks when conducting education research. The conceptual or theoretical framework provides a lens through which to identify gaps in the literature, operationalize appropriate constructs, and hypothesize relationships, as well as design methodology. In addition, such frameworks can provide scholars lenses for viewing how societies, organizations and people interact in certain ways.[1] Despite the importance of frameworks, educators struggle to consistently identify and incorporate them when designing their research studies. Knowing that this puts them at risk for negative peer review and rejection from some medical education journals,[2,3] it is critical for educators to understand the practical application of frameworks and how they can help situate one's research study in the literature. Thus, the purpose of this session, sponsored by the GEA's Medical Education Scholarship Research and Evaluation (MESRE) section, is to explore the practical application of conceptual and theoretical frameworks to education research.

20 min   An opening role play will illustrate how frameworks are used early in project planning. Facilitators will explore their decision-making process and share perspectives on common barriers.

30 min   Participants will complete a small-group activity using a case vignette requiring the development a notional educational research project. Facilitators will help participants compare and contrast two frameworks that could be utilized for this project. Using a literature-based worksheet, participants will consider implications of the frameworks for designing and reporting the project.

20 min   Facilitators will reflect on common themes that emerged from small-group discussion as a way of illuminating potential challenges to applying frameworks. They will also discuss tips and potential pitfalls for incorporating frameworks into research manuscripts, connecting principles discussed in the small-group case vignette to examples in the literature and building upon the themes identified by the small-group facilitators. The session will close with a review of a sample publications handout and a list of available resources.

Experience:

Anna T. Cianciolo has been a medical education faculty member for 8 years. S. Beth Bierer has been a medical education faculty member for 15 years. Heeyoung Han has been a medical education faculty member for 8 years. Janet Riddle, Director of Faculty Development, teaches in the UIC MHPE program and always asks her graduate students, "What's your conceptual framework?" All presenters have served in MESRE leadership roles.

References:
1. Reeves S, Albert M, Kuper A, Hodges BD. Qualitative research: why use theories in qualitative research? BMJ 2008;337(7670):631-634.
2. Bordage G. Moving the field forward: going beyond quantitative-qualitative. Acad Med 2007;82(10 SUPPL):S126-S128.
3. Meyer HS, Durning SJ, Sklar DP, Maggio LA. Making the first cut: an analysis of Academic Medicine editors' reasons for not sending manuscripts out for external peer review. Acad Med 2018;93(3): 464-470.
4. Laksov B, Dornan T, Teunissen PW. Making theory explicit – an analysis of how medical education research(ers) describe how they connect to theory. BMC Med Ed 2017;17:18.
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Preventing Trainee Crisis/Suicide through Early Identification of Distress

Submission Type: Small Group Discussions
Accepted as: Small Group Discussions

Authors:

Jeffrey Cannon, Case Western Reserve University School of Medicine
Eran Magen, Center for Supportive Relationships
Kim Gilliam, Wright

Abstract Body:

Rationale:

Administrators often learn of trainee distress only after trainees have already fallen behind academically, exhibited profoundly unprofessional behaviors, or tragically taken their lives. This reactive approach to identifying distress severely limits our ability to intervene effectively with trainees who are spiraling down. In this session, we present a novel proactive approach to suicide/crisis prevention, implemented at 6 medical training programs at the UME and GME level, that operates by identifying early signs of distress and offering immediate referrals to support resources. Early Alert is a third-party tool that proactively checks in with trainees once a week, using a confidential text messaging. With weekly response rates between 60%-80%, trainees reporting distress are immediately referred to on-campus and off-campus support resources, thereby facilitating very early intervention and preventing crisis among trainees. After reviewing Early Alert, we will facilitate a discussion about other methods of early identification and referral of trainees in distress, in order to exchange best practices and form action plans for participants' home institutions. This session is geared toward medical educators and administrators who seek to learn about and share their own approaches to identifying at-risk trainees as early as possible.

Learning Objectives:

Participants will (1) Compare the advantages and disadvantages of passive and proactive methods of monitoring trainee wellness; (2) Determine the appropriateness of implementing proactive monitoring systems in specific scenarios; (3) Identify new early-identification approaches to implement at their home institution.

Session Methods and Format:

5 minutes:	Review of medical student and resident distress, burnout, substance abuse, and suicide
15 minutes:	Review of passive and proactive approaches to early identification of at-risk trainees
5 minutes:	Breakout group exercises (determining appropriateness of passive and proactive methods of identifying at-risk trainees).
10 minutes:	Discussion: Current approaches of identifying at-risk trainees at participants' home institutions
10 minutes:	Q&A / Group discussion

Experience:
Jeffrey Cannon, MD, is a first year resident in anesthesiology at Cleveland Clinic (Case Western Reserve).

Eran Magen, PhD, is the founder and CEO of Circles of Support, the former research director of the department of Counseling and Psychological Services at the University of Pennsylvania.

Kim Gilliam, EdD, is the director of student services at the Wright State University Boonshoft School of Medicine.

References:
Rotenstein LS, Ramos MA, Torre M, et al. Prevalence of Depression, Depressive Symptoms, and Suicidal Ideation Among Medical Students: A Systematic Review and Meta-Analysis. JAMA. 2016;316(21):2214-2236. doi:10.1001/jama.2016.17324. Thompson G, McBride RB, Hosford CC, Halaas G. Resilience among medical students: The role of coping style and social support. Teach Learn Med. 2016;28(2):174–182.

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Promoting first generation college graduate success in medical school: An online toolkit of resources

Submission Type: Workshops
Accepted as: Workshops

Authors:
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Ralph Lamonge, Loyola University Chicago Stritch School of Medicine
Marnie Ruiz, Northwestern University Feinberg School of Medicine
Toshiko Uchida, Northwestern University Feinberg School of Medicine

Abstract Body:
Rationale:
Medical students who were the first in their families to graduate from college bring unique strengths with them to medical school.[1] First generation college graduates (FGCG) and others who come from backgrounds with limited exposure to medicine may also have unique needs that are not always recognized by their schools.[2] The Undergraduate Medical Education (UME) Section of the Group on Educational Affairs (GEA) has convened a working group which is developing an online toolkit of resources for medical schools to support and celebrate their FGCG students. The purpose of this workshop will be to share resources from the toolkit and to help participants develop a strategy for supporting FGCG medical students at their own institutions.

Learning Objectives:
By the end of this workshop participants will be able to:
- Identify challenges FGCG medical students may face during medical school
- List a 5-part framework for supporting 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: Introductions
- 10 minutes: Discuss definition(s) of "first gen" students
- 15 minutes: Student presenters share their experiences as FGCG students
- 10 minutes: Introduce toolkit resources categorized into 5 areas of support for FGCG students:
  - Academic support
  - Institutional climate
  - Professional development and career mentoring
  - Emotional support
  - Financial resources
- 20 minutes: Small groups work through case studies focusing on each of the 5 areas of support, and develop a plan to assist FGCG students in these scenarios
- 20 minutes: Small groups report out on their plans for supporting the FGCG students in the case studies

- 5 minutes: Participants pair and share plans for implementing changes at their own institutions
- 5 minutes: Wrap-up
- 5 minutes: Workshop evaluations

Experience:

Cory Hewitt is a fourth year medical student at the University of South Dakota Sanford School of Medicine. He graduated from the University of South Dakota with a Bachelor of Science in Medical Biology. Born in Spearfish and raised in Belle Fourche, South Dakota, he is the first in his family to have attended medical school.

Ralph Lamonge is a second year medical student at Loyola University Chicago Stritch School of Medicine. He graduated from the University of Florida with a Bachelor of Health Science. Born in Port Au Prince, Haiti, he is the first in his family to have gone to college in the United States and attend medical school.

Marnie Ruiz is a first year medical student at Northwestern University Feinberg School of Medicine. She graduated from the University of North Carolina – Chapel Hill with a Bachelor of Arts in Biology. Born in Sagua La Grande, Cuba, she is also the first in her family to have graduated from college in the United States.

Toshi Uchida is the CGEA representative to the UME section and the coordinator of the UME online toolkit of resources for medical schools to support FGCG students.

References:
1. https://www.aamc.org/news-insights/finding-success-first-generation-medical-student
2. Mason HRC, Winesman J, Marcellon R, Huamantla M, Ruiz C, Ayala EE. First generation medical student wellness in the US: A cross-sectional snapshot. J Best Pract Health Prof Divers. 2018;11:96-106.

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Providing and Requesting AC2Tive Feedback

Submission Type: Workshops
Accepted as: Workshops

Authors:
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Karen Marcdante, Medical College of Wisconsin
Brownie Anderson, National Board of Medical Examiners

Abstract Body:

Rationale:
Feedback is an essential component of learning. It can come in many forms ranging from faculty silence when a learner presents a patient's differential diagnosis to suggestions that to read more. Yet feedback is usually among the lowest rated items teaching evaluation items (eg, 2018-19 ACGME Resident Survey results 1/3 of programs are not meeting compliance requirements for the item "satisfied with feedback..."). Recent studies on feedback highlight the challenge, "Despite decades of faculty development workshops on feedback, there has been little to no sustained impact". Consistent with the literature on well-being, recent studies shift the emphasis to a learner-faculty alliance, changing the dynamic from that of learner as receiver who easily "wrongspots" all the reasons why the feedback is incorrect, to that of a learner soliciting actionable feedback to achieve their valued performance goals. This interactive session will provide an overview of the recent feedback literature, our successful evidence-based model, with time for participants to practice soliciting and providing actionable feedback [current performance, target performance with specific strategies and resources] and discussion faculty development implications.

Learning Objectives:
1. Describe current findings re: why learners perceive they don't receive feedback
2. List the key elements associated with actionable feedback: it includes current performance assessment, target performance (goal) and specific strategies/resources for bridging the gap
3. Provide/solicit actionable feedback in 1-2 minutes per interaction (e.g., clinic, end of a meeting)

Session Methods and Format:
3 min   Session Overview
5 min   Interactive Quiz on Feedback (Lg Grp Interactive):
- What are the key features of effective feedback? (timely, changeable behavior)
- How often do learners change based on your feedback?

12 min What Does the Literature Tell Us about Feedback – Key Features of
- Actionable feedback for learning/growth
- Soliciting Actionable Feedback: AC2T Model - Ask/Answer (specific, focus on growth), Clarify (to be action oriented), Consider (as step toward your performance goal), say Thanks.
- Demonstration/Debrief

40 min Asking for and Giving Feedback – Practice Common Situations (Sm Grps)

- Group select from list common learner/professional feedback scenarios from list (including teacher solicits feedback)
- able members volunteer/assign roles as feedback solicitor, provider, observer(s)
- Observers will prepare to Give Feedback focused on degree to which feedback incorporated key elements of actionable feedback
- Debrief then repeat with new scenario.

10 min Lg Grp Debrief of Small Groups AC2T
15 min Interactive Discussion : Actionable Take Homes /faculty development
5 min Wrap Up + Key Take Homes and References

Experience:

Deborah "Deb" Simpson, PhD is an experienced presenter (>700 invited/per reviewed sessions) who blends evidence, faculty/organization needs, with humor/innovation to address gnarly situations faculty development/medical education.

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.

Brownie Anderson, MA is an internationally recognized medical educator, leader and scholar whose evidence and reality based perspectives are frequently solicited to guide and frame innovation and assessment in medical education.

References:

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Reimaging faculty development: lessons from professional development models of business consulting firms

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C. Leslie Smith, Southern Illinois University School of Medicine

Abstract Body:
Rationale:
Academic medicine is similar to professional service firms in that there is no manufacturing of a tangible product, but rather the provision of services to patients, education of learners, and collaboration with colleagues. These services rely on our employees' knowledge and skill. However, faculty and employee development strategies in academic medicine have remained relatively unchanged.

Many leading professional services firms have long recognized that their most valuable asset is their employees. Therefore they invest in employee professional development through professional development programs that serve individual needs. Examples include career development paths, onboarding, coaching, shadowing, webinars, knowledge sharing, face-to-face workshops, and hybrid learning. These consulting firms' professional development strategies are structured, intentional, and customizable and use hybrid learning methods.

Numerous articles in human resource development have demonstrated the importance of investing in employee continuing education. However, the application of proven strategies from the business world is uncommonly utilized in academic medicine. Therefore, it would be worthwhile to learn trends and challenges from professional development in the business world and rethink the traditional faculty and staff development approaches used in academic medicine. In an effort to change the culture of faculty development, SIU School of Medicine launched the Center for Human and Organizational Potential in 2018. One of the missions of the center is to promote personal and professional development of not only faculty but of all employees and community partners. We have introduced a multiple-level approach for professional and leadership development to adapt to individual developmental needs. Additionally, an unconventional theme of the Center was to include wellness as a top priority intentionally: this includes individual mental and physical wellness and multi-level organizational wellness, all of which have an impact on institutional culture.

Participants will be engaged in small group discussions on how professional development trends in business consulting can be applied and implemented in academic medicine.

Learning Objectives:
- Describe how business consulting firms strategize professional development for their employees
- Identify ways to reimagine faculty development programs

- Discuss alternative approaches to enhance personal and professional development experiences

Session Methods and Format:
Small group discussion
- Introduction: background (10 mins)
    - Discussion: current faculty development programs
- Presentation: professional development trends in business consulting firms (15 mins)
    - Discussion: professional development in business, what can we apply and how
- Presentation: New model for faculty development and beyond (15 mins)
    - Discussion: what to consider, how to start the program
- Q&A (5 mins)

Experience:
Dr. Suh is an Assistant Professor in Medical Education and has extensive consulting experience in organizational change management working with Fortune 500 companies, healthcare providers, and academic medical centers.

Dr. Klamen is the Senior Associate Dean for Education and Curriculum, and the Professor and Chair of the Department of Medical Education at Southern Illinois University School of Medicine. She has extensive experience in curricular design and innovation, as well as medical education research.

Dr. Smith has over 25 years of experience in adult education and curriculum design, as well as a background in allopathic and integrative medicine.

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Seeing is Believing: Visualize Your CQI Data and Improve Outcomes

Submission Type: Workshops
Accepted as: Workshops

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Dean Parmelee, Wright State University Boonshoft School of Medicine
Jason Booza, Wayne State University School of Medicine
Robert Reaves, Wayne State University School of Medicine

Abstract Body:
Rationale:
The need for continuous quality improvement (CQI) and data driven decision-making (DDDM) is not unique to medical education.[1] Though the Liaison Committee on Medical Education (LCME) has strengthened requirements for formal CQI efforts to achieve accreditation standards,[2] the amount of data that schools must collect and evaluate for informing the requisite CQI process and actions is overwhelming. It is important for school leadership and curricular oversight bodies to be able to easily visualize status, interrelationships, and changes between such data sets as the AAMC Graduation Questionnaire (GC), the Y2 Survey, the Independent Student Analysis (ISA), and many other in-house markers that reflect the learning environment and student progression. This workshop will provide participants with a hands-on tool to visualize their institution's data using Excel and provide a more efficient way to visually identify trends for CQI analysis and action.

Learning Objectives:
- Establish innovative ways to apply CQI and DDDM practices to achieve LCME accreditation compliance.
- Acquire and practice with the unique Excel tool developed for this workshop for data entry, analysis, and visual display of trends.
- Prioritize areas for continuous quality improvement (CQI) and monitoring by evaluating data trends at their home institutions.

Session Methods and Format:
- [15 minutes] Brief introductions from the workshop facilitators and overview of:
  - What are CQI and DDDM?
  - Review LCME Element 1.1
  - Brief overview of development of Excel dashboarding tool
- [30 minutes] At each table, participants will work with colleagues to analyze a Case Scenario provided by Wright State and Wayne State, including an introductory tutorial on how to enter data into the Excel tool (data will be provided and related to the Case)
  - Each participant accesses and downloads the Excel tool onto their own laptop.
  - Each table will apply the PDSA (plan-do-study-act) cycle to the Case Scenario (PDSA cycle templates will be provided).
  - Each table will then briefly present their PDSA plan to the larger group for feedback and comparison with other groups who worked through the same Case.

- [40 minutes] Each participant will use their own institutional GQ or ISA data to input ONE data item into the Excel tool.
    - Each participant will have 15 minutes to input their data and develop their own individual PDSA plan for the ONE data item that they inputted into the Excel tool.
    - For the remaining 25 minutes, participants at each table will briefly share with colleagues their PDSA plan and receive feedback to enhance their improvement plan.
- [5 minutes] Wrap-up and questions

Experience:
Colleen Hayden, MS, EdD(c): Director of Medical Education and Accreditation (12 years at Wright State); co-convener for the (new) Program Evaluation & Accreditation SIG
Amber Todd, PhD: Director of Assessment (3 years at Wright State)
Dean Parmelee, MD: Director of Educational Scholarship & Program Development (18 years at Wright State)
Jason Booza, PhD: Assistant Dean of CQI & Compliance (8 years at Wayne State)
Robert Reaves, MBA: Director of Institutional Effectiveness (2 years at Wayne State)

References:
1. Provost F, Fawcett T. Data science and its relationship to big data and data-driven decision making. Big Data. 2013;1(1),51-59.
2. Implementing a System for Monitoring Performance in LCME Accreditation Standards. [September 12, 2019]. Retrieved from http://lcme.org/wp-content/uploads/filebase/
white_papers/CQI-Guidance-Document-10-16.docx. Published October 19, 2016.

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Tech Tools for Teaching: Planning for strategic incorporation of technology

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Allison Prelosky-Leeson, Cleveland Clinic Lerner College of Medicine of Case Western Reserve University
Michaela Stiber, Cleveland Clinic Lerner College of Medicine of Case Western Reserve
Ray Gardner, Cleveland Clinic Lerner College of Medicine of CWRU

Abstract Body:

Rationale:
Medical education faculty increasingly seek to incorporate technology into their educational activities to enhance interactivity with learners. When aligned with learning objectives, technology can assist instructors in engaging learners, enhancing knowledge retention, and gathering feedback. This interactive session will assist participants to identify and gain familiarity with appropriately aligned technology tools and planning for implementation in existing curriculum.

Learning Objectives:
- Discuss benefits of incorporating technology into educational activities
- Align technology plans to course objectives
- Identify specific technology tools to enhance existing curriculum
- Utilize a planning tool to incorporate technology into teaching practices

Session Methods and Format:
Introduction (5 min): Audience discussion regarding their current comfort level in selecting and implementing technology in their teaching. Learning objectives presented.

Activity (10 min): Participants will engage in a think-pair-share activity to discuss the following: What is one goal, pain point, or barrier to incorporating tech in your teaching environment? Activity followed by debrief and discussion of discuss themes.

Content (15 min): Rationale for utilizing technology strategically will be presented, including open ended questions to engage the audience

- Rationale: Why incorporate technology?
- Aligning technology with educational objectives
- Identifying educational "bottlenecks" as an opportunity to leverage technology

Interactive Content (35 min): Participants will identify stages where technology can be incorporated, while presenters demonstrate applicable tools.

> Pre-interaction education: Areas of focus include: developing shared understanding of a complex topic; engaging learners prior to the interaction; introducing content.

Activity: Participants will utilize Google Docs to share their ideas for pre-interaction educational opportunities.

> The presenters will share a Padlet with resources for further reading on all technologies presented

- During a class or educational activity: Opportunities include: gauging learner's understanding; stimulating recall/prior knowledge, enhancing group activities with multimedia

Activity: Participants will respond to a question via Poll Everywhere

- Assessment, Evaluation and Feedback: Technology can assist in assessing and evaluating students during or after a class, or gaining feedback.

Activity: Presenters will demonstrate building and implementing a Google Form, to allow participants to view this quick and user-friendly technology

- Presenters will discuss contingency planning for technology glitches.

Activity (20 min): Participants will utilize a tool developed by the presenters to plan for incorporation of technology into their teaching activities. Participants will identify educational bottlenecks and strategize for use of one technology tool prior to or during an educational interaction, as aligned with an educational objective.

Conclusion (8 min): Participants will share key takeaways via a live-generated word cloud on Mentimeter. Presenters will address additional questions.

Experience:

Allison Prelosky-Leeson, MEd, Program Manager, Office of Educator & Scholar Development, teaches and trains interprofessional educators at the Cleveland Clinic in the areas of curriculum development, interactive teaching, and feedback.

Michaela Stiber, BS, CCLCM Evaluation Manager, utilizes multiple technology platforms to develop, implement, and analyze evaluations and assessments of CCLCM program services.

Ray Gardner, MBA, CCLCM Education Coordinator, trains faculty in incorporating specific technologies into classroom teaching environments.

References:
Miller, M. (2019, August 23) How to Make Smart Choices About Tech for Your Course. The Chronicle of Higher Education. Retrieved from https://www.chronicle.com/interactives/08262019-adviceguide-tech-choices

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Title: You Can't Do That! Removing Shelf Exams and "Blowing Up" Clerkships

Submission Type: Panel Discu+H2:H21ssion
Accepted as: Panel Discu+H2:H21ssion

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Anna Cianciolo, Southern Illinois University Carbondale

Abstract Body:
Rationale:
Medical school is traditionally broken up into two phases: the preclinical and the clinical phase. While the preclinical phase focuses on foundational scientific and medical knowledge, the clinical phase focuses on hands-on patient care and clinical skills. Given that the clinical phase curriculum focuses more on clinical skills, assessment for the phase needs to shift toward clinical skills over basic content knowledge.

Many medical schools use the NBME Subject Examinations for the Clinical Sciences (commonly referred to as Shelf exams) to assess medical knowledge during clerkships. The benefit of these exams is that they are standardized, provide a benchmark for student performance compared with students nationally, and provide an objective numerical score. Assessing clinical skills during clerkships is a harder task. Objective Structured Clinical Examinations (OSCEs) can provide a numerical measure of clinical skills, but since these use people to provide feedback of student performance, variability can be seen between standardized patients. Preceptor evaluations of student performance are even more variable, despite the use of rubrics and faculty education. Because of the objectiveness of Shelf scores and the variability of clinical evaluations, most clerkship grading criteria are skewed toward Shelf exams while downplaying clinical evaluations.

Medical schools know that doing well on a standardized test is not the only measure of a high-quality doctor, but assessing clinical skills is truly challenging and difficult to make objective. This panel presentation will highlight strategies from two different medical schools that have removed Shelf exams and revised clerkships to include more wholistic assessment of students. Panelists will discuss their successes and challenges with revising the curriculum and grading criteria. Attendees will gain insight into how to feasibly and reliably assess students during clerkships without using Shelf exams.

Learning Objectives:
By the end of this panel discussion, participants will be able to:
- Describe ways to assess clerkship students without shelf exams
- Compare and contrast changes in clerkship curricula across medical schools
- Identify barriers to implementing change in clerkships
- Discuss opportunities for clerkship curriculum change at their institution
- Design changes to home institution clerkship curriculum

Session Methods and Format:
Introduction of session objectives, moderator, and panelists [5 minutes, led by moderator]
Overview of clerkships at each medical school
- Southern Illinois University School of Medicine [15 minutes]
    - Questions for Southern Illinois University SOM [5 minutes]
- Wright State University Boonshoft School of Medicine [15 minutes]
    - Questions for Boonshoft SOM [5 minutes]
- Challenges in clerkship changes [15 minutes, led by moderator]
    - Attendee questions/comments/additions
- Successes in clerkship changes [15 minutes, led by moderator]
    - Attendee questions/comments/additions
- Questions and comments from attendees [15 minutes]

Experience:
Irina Overman, MD: Director, Foundations of Clinical Practice (7 years at Boonshoft SOM)
Amanda Bell, MD: Director, Biomedical & Clinical Integration (15 years at Boonshoft SOM)
Debra Klamen, MD, MHPE: Senior Associate Dean for Education and Curriculum (15 years at Southern Illinois University SOM)
Anna Cianciolo, PhD: Associate Professor, Department of Medical Education (8 years at Southern Illinois University SOM)

References:
N/A

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Try This at Home: Strategies for Supporting Faculty Scholarly Productivity

Authors:
Klara Papp, Case Western Reserve University School of Medicine
Brian Mavis, Michigan State University

Abstract Body:
Rationale:
It is an expectation that faculty engage in teaching, service and scholarship. Faculty scholarship is highly valued by institutions, often more explicitly than other faculty roles. The scholarly productivity of faculty often is used as a proxy for team leadership, collaboration skills and expertise, thereby impacting decisions related to hiring, salary, resource allocation, promotion and tenure[2]. In spite of or perhaps because of the pressure faculty feel to be productive scholars, many are challenged to be productive.

Multiple studies have documented the personal (motivation, knowledge, work habits, etc.), leadership (resource availability, goal orientation, management styles, etc.) and institutional characteristics (resources, rewards, mentoring, culture, etc.) that support scholarly productivity[1,3]. At a local level, many of these factors are not readily, quickly or reliably influenced. However, there are ways faculty can support each other to increase the likelihood of success in achieving scholarly goals. These strategies include mentoring, creating collaborations, targeting resources, approaches to feedback, coaching around specific skills, as well as creating structures to promote goal setting and enhance efficacy.

Learning Objectives:
Participants will:
- Identify three challenges that faculty cite that inhibit their scholarly productivity.
- Describe three strategies that have others have tried to support faculty scholarship and the pros and cons of each strategy.
- Describe the goals of writing groups and the features of different writing group approaches.
- Identify three resources that support faculty scholarly productivity.

Session Methods and Format:
Introduction (5 minutes): Presenters will introduce themselves and the topic of the session and outline the learning objectives
Background and Examples (15 minutes): Presenters will provide examples of strategies adopted at their home institutions and describe the degree to which these strategies have been successful. Examples of strategies to be presented include reserved writing times, writing accountability groups, coaching and mentoring sessions, group manuscript reviews and developing resource repositories.
Group Discussion: (25 minutes): This will be time for sharing ideas, resources, successes and challenges. The presenters will invite session participants to provide additional examples of strategies that they have used including the resources needed and outcomes of their efforts. The

presenters will document various strategies and resources that emerge from the session and make them available to participants after the session through a sign-in sheet.

Experience:

Brian Mavis is a professor of medical education with multiple publications and conference presentations, as well as experience implementing strategies to support faculty scholarly productivity.

Klara Papp is Graber Term Professor of Health Learning, associate dean for assessment and continuous quality improvement with recent experience implementing a structured approach to supporting scholarly productivity.

References:

1 Bland CJ, Center BA, Finstad DA, Risbey KR & Staples JG, A Theoretical, Practical, Predictive Model of Faculty and Department Research Productivity. Academic Medicine. 2005; 80:225–237

2 Mavis BE, During SJ & Uijtdehaage S. Authorship order: In search of practical guidance for the medical education community. Teaching and Learning in Medicine. 2019; 31(3): 288-297.

3 Yeh HC, Bertram A, Brancati FL, Cofrancesco J Jr. Perceptions of division directors in general internal medicine about the importance of and support for scholarly work done by clinician-educators. Academic Medicine. 2015 Feb;90(2):203-8.

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Utilizing Team-Based Learning to Teach Bioethics

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Stephanie Lauden, Nationwide Children's Hospital
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John Mahan, Nationwide Children's Hospital

Abstract Body:
Rationale:
Medical accrediting bodies accept the notion that bioethics is vital curricular component, but inherent pedagogical barriers remain. While Team-based learning (TBL) in medical education has been shown to be an effective strategy to teach students both clinical and basic sciences, studies evaluating the effectiveness of TBL in bioethics education have been scant. In this workshop participants will identify and analyze barriers to teaching ethics and professionalism to clinical learners. Participants will then brainstorm strategies for remedying these problems. Next, attendees will learn how to create TBL exercises in ethics and participate in a bioethics "mini-TBL." Finally, we introduce our strategy and preliminary data for a successful TBL-based ethics curriculum.

Learning Objectives:
>1. Analyze barriers to ethics education for clinical learners.
>2. Describe the process of creating a TBL exercise and identify advantages of TBL over other methods.
>3. Utilize TBL as a strategy for overcoming barriers to ethics education.
>4. Participate in a "mini-TBL" focusing on ethics and suggest areas of success and improvement.

Session Methods and Format:
This session will be an interactive, skill-building workshop with emphasis on audience participation. The object is to "teach the teacher" while actively using TBL skills. Ultimately, the attendee will have confidence they can create their own TBL exercise in ethics, because they will have just participated in one that they helped create.
I. Welcome and introduction (10 minutes)
a) Objectives (create learning objectives for session)
b) Discuss the need for ethics education, innovation, and barriers (large group discussion)
c) Introduce utilizing TBL for ethics.
II. TBL education (80 minutes: participate in TBL)
a) Pre reading (TBL basics)
b) Individual readiness assurance test [IRAT]
c) Group readiness assurance Test [GRAT] (small group)
d) Application Exercise: Create an Ethics TBL (small group)
III. Wrap up (5 minutes)
Evaluation and pre/post test data

IV. Question and Answer (20 minutes)

Experience:

1. Ashley K. Fernandes, MD, PhD: Director of Professionalism Competency, Associate Director of the Center for Bioethics, and has presented nationally and internationally in medical education, bioethics, and bioethics education; he has extensive experience in teaching at the UME and GME levels

2. John Mahan, MD, is the former residency program director at Nationwide Children's Hospital, a Professor of Pediatric Nephrology, and a national expert in professionalism education and medical education and the Director of Faculty Development at The Ohio State University

3. Sandra Spencer, MD, is an associate professor of pediatrics in the Division of Pediatric Emergency Medicine, a member of our GME ethics education team, and a leader in QA/QI at Nationwide Children's Hospital.

4. Stephanie Lauden, MD, CTropMed, is an assistant professor of pediatrics in the Division of Hospital Pediatrics and brings a global health/international health perspective and a passion for social justice and health care disparities; she is active in education research.

5. Sheria Wilson, MD, MA, is an assistant professor of pediatrics in the Division of Neonatology with an advanced degree in bioethics and a depth of clinical experience in the high intensity environment of the NICU, she also directs a graduate course in pediatric ethics.

References:

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Touchet, TK, and Coon, KA. A pilot use of Team-Based Learning in psychiatry resident psychodynamic psychotherapy education. Acad Psych. 2005; 29: 293-6.

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Writing Multiple Choice Questions (MCQs) for Basic & Clinical Sciences

Submission Type: Workshops
Accepted as: Workshops

Authors:

Miguel Paniagua, National Board of Medical Examiners (NBME)
Thomas Rebbecchi, NBME

Abstract Body:

Rationale:

Faculty can benefit from developing versatility in item writing skills based on curricular needs and exam stakes for both the basic and clinical sciences. Experienced item writers will find this a useful refresher course and an opportunity to learn new skills.

Learning Objectives:

Participants will gain the following skills:

- Identify and correct Multiple Choice Question (MCQ) flaws
- Distinguish between items requiring simple recall versus critical thinking
- Review and write integrated, clinical and foundational science-focused MCQ's
- Demonstrate versatility in creating multiple choice items to match curricular needs

Session Methods and Format:

Participants from different disciplines will participate in the workshop groups, promoting valuable cross-discipline and collegial exchange. Writing items in teams and providing feedback within and across groups will broaden their skills. Participants will write items in teams and provide feedback within and across groups. Faculty will develop versatility in item writing skills based on curricular needs and exam stakes for both the basic and clinical sciences in these challenging competencies. Copies of "Constructing Written Test Questions for the Basic and Clinical Sciences, 4th Edition" will be provided to all participants.

- Welcome and Introductions   10 min
- Pretest   10 min
- One-Best-Answer Items   15 min
          - Overview of families of MCQs
          - Introduction to using Clinical Vignettes
- Item Flaws: Irrelevant Difficulty   25 min
- Item Flaws: Testwiseness and review pretest   15 min
- Assessing Critical Thinking with Clinical Vignettes   15 min
- Item Writing Practice, Review, and questions   30 min

Experience:

Miguel A. Paniagua, MD, FACP, FAAHPM currently serves as Medical Advisor for Solutions Design & Delivery at the National Board of Medical Examiners. He is the co-editor of "Constructing Written Test Questions for the Basic and Clinical Sciences" (4th edition an item-writing manual published by the National Board of Medical Examiners® (NBME®).

Thomas Rebbecchi, MD currently serves as Medical Advisor in Marketing & Product Management at the National Board of Medical Examiners.

References:
M. Paniagua, K. Swygert, S. Downing: Written Tests: Writing high-Quality Constructed-Response and Selected-Response Items. Assessment in Health Professions Education, Second Edition. R. Yudkowsky, Y. Park, S. Downing (eds.). Routledge, Page: 109-125, July 2019 Notes: DOI: 10.4324/9781138054394ISBN: 1138054399.
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Haist SA, Butler AP, Paniagua MA: Testing and evaluation: the present and future of the assessment of medical professionals. Adv Physiol Educ. 2017 Mar 1;41(1):149-153. 1(41): 149-153, mar 2017.

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Daniel Hickey	The University of Toledo
Kerrie Jordan	Kansas City University of Medicine and Biosciences
Princess Currence	Rush Medical College
Alex Grieco	Ohio State University
Virginia Uhley	Oakland University William Beaumont School of Medicine
Toshi Uchida	Northwestern University Feinberg School of Medicine
Harold J Bell	Central Michigan University College of Medicine
Nicole Verbeck, MPH	Ohio State University College of Medicine
Katherine Cornelius	Mayo Clinic
Patrick A Carr	Univ of North Dakota School of Medicine and Health Sciences
Sol Roberts-Lieb	University of Illinois
Bindu Menon	The University of Toledo College of Medicine and Life Sciences
Lori DeShetler	The University of Toledo
Marcel D'Eon	University of Saskatchewan College of Medicine
Melissa Hansen	The University of Toledo
Thomas Schmidt	Carver College of Medicine, The University of Iowa
Greg Kaupla	The Medical College of Wisconsin
Koong-Nah Chung	Washington University School of Medicine
Stephanie Mann	The University of Toledo College of Medicine
Theresa Kristopaitis	Loyola University Chicago Stritch School of Medicine
Celia O'Brien	Northwestern University - Feinberg School of Medicine
Sylk Sotto	Indiana University School of Medicine
Anna Volerman	University of Chicago
Susan Anderson	University of South Dakota Sanford School of Medicine

Ilene Harris	University of Illinois-Chicago College of Medicine
Karen Marcdante	Medical College of Wisconsin
Aleece Caron	The MetroHealth System/Case Western Reserve University
Paula T. Ross	University of Michigan
Xiaodong (Phoenix) Chen	Ohio State University
Eron Drake	Michigan State University
Alex Grieco	Ohio State University
Jason Booza	Wayne State University School of Medicine
Heather Billings	Mayo Clinic
Beth Bierer	Cleveland Clinic Lerner College of Medicine
Prasanna Abeyrathna	A.T. Still University of Health Sciences
Khalilah Gates	Northwestern
Elissa Hall	Mayo Clinic College of Medicine and Science
Janet Riddle	University of Illinois-Chicago
Melissa Quinn	The Ohio State University
David P. Way	The Ohio State University COM Dpt of Emergency Medicine
Steve Vance	Central Michigan University
Teresa Hartman	University of Nebraska Medical Center
Kari L Nelson	University of Nebraska Medical Center
Maria Baggstrom	Washington University in St. Louis
Janelle Bolden	Northwestern Feinberg College of Medicine
Abbey Fingeret	University of Nebraska Medical Center
Josh Hopps	Feinberg School of Medicine, Northwestern University
Jennifer Quaintance	University of Missouri-Kansas City School of Medicine
William Keenan	
Carley Sauter	Medical College of Wisconsin
Joseph S Deters	McGaw Medical Center of Northwestern University
Ilene Harris	University of Illinois College of Medicine - Chicago
Brenda Roman	Wright State University Boonshoft School of Medicine
Tina Thompson	Central Michigan University College of Medicine
Jen Dolson	University of Kansas Medical Center
Dena Higbee	University of Missouri School of Medicine
Giulia Bonaminio	University of Kansas School of Medicine
Jessica Greenfield	Cleveland Clinic
Nehad El-Sawi	Des Moines University Medicine & Health Sciences
Kerrie Jordan	Kansas City University of Medicine and Biosciences
Paul Westerman	Advocate Aurora Health
Tammy Webster	University of Nebraska Medical Center
Ling Wang	Michigan State University
Corinne E Lehmann	University of Cincinnati College of Medicine
Caren Stalburg	University of Michigan
Robert Treat	Medical College of Wisconsin
Rachel Wolfson	University of Chicago
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Jennifer   Wayne State University School of Medicine
Rebecca Graves   University of Missouri
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