WELCOME to the Fifth Annual Med Ed Day sponsored by the University of Pittsburgh School of Medicine and the Health Sciences.

The University of Pittsburgh School of Medicine Academy of Master Educators (www.ame.pitt.edu) is comprised of senior faculty with expertise in medical education and is designed to:

- Recognize and reward excellence in education
- Advance education through innovation and professional development of faculty
- Support and promote educational scholarship

The Med Ed Day event provides a showcase for educational scholarship and educational innovation across the schools of the health sciences. We anticipate an afternoon of faculty members, fellows, residents, and students engaged in outstanding teaching and educational scholarship.

This event is open to all University of Pittsburgh Health Sciences faculty and students as well as University of Pittsburgh Medical Center Graduate Medical Education fellows, residents and staff.
2020 MED ED DAY

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12:00 to 1:00 p.m. Keynote Presentation

Targeting Adaptive Expertise:
Theory and Strategies to Guide Medical Learners

Bill Cutrer, MD MEd

1:15 to 2:15 p.m. Workshop

Using Social Media in Academic Medicine

Michael Simonson, MD
Casey McQuade, MD
Amar Kohli, MD MS

2:30 to 3:30 p.m. Workshop

“Beyond Zoom - Effective Use of Remote Learning Technology”

James B McGee, MD

Posters

Video abstracts will be posted online at: YouTube
Dr. Cutrer received his M.D. with high distinction from the University of Kentucky College of Medicine and completed his Pediatrics residency, chief residency and Pediatric Critical Care fellowship at Baylor College of Medicine and Texas Children’s Hospital. He also has a Masters of Education from the University of Cincinnati. Dr. Cutrer is an Associate Professor of Pediatrics in the Division of Pediatric Critical Care Medicine at Vanderbilt University School of Medicine (VUSM). He is actively involved in medical student education, including curriculum development, student assessment, and program evaluation, where he serves as the Associate Dean of Undergraduate Medical Education.

Dr. Cutrer is very interested in understanding how students learn in the workplace and how to help them more effectively. He has published and presented widely on these topics. He co-led the AMA’s Accelerating Change in Medical Education initiative Master Adaptive Learner Working Group and is the leader of the Vanderbilt core team participating in the AAMC pilot project Core Entrustable Professional Activities for Entering Residency (Core EPAs). Dr. Cutrer is a co-PI on the joint VUMC-UMMC GOLLD project selected for the AMA’s Reimagining Residency initiative. Additionally, Dr. Cutrer is part of the Kern National Network for Caring and Character in Medicine.
WORKSHOPS
Using Social Media in Academic Medicine

Michael Simonson, MD

Simonson is a hospitalist and Academic Clinician-Educator Scholars Fellow within the Division of General Internal Medicine at UPMC. Prior to this he completed his internal medicine residency at UPMC Presbyterian-Shadyside. His primary scholarly interests are in curriculum development and trainee assessment. Along with Dr McQuade, he is a co-creator of @MedEdPGH, an educational Twitter account used for promoting clinical reasoning skills and evidence-based medicine.

Casey McQuade, MD

McQuade is an academic hospitalist at UPMC. He completed his Internal Medicine residency as well as a chief resident year at UPMC. His primary research interests are methods for decreasing heart failure readmission rates and the use of social media for medical education. He runs the popular Twitter feed @MedEdPGH, which hosts online, live case discussions that focus on developing participants’ clinical reasoning skills.

Amar Kohli, MD, MS

Kohli is an Assistant Professor of Medicine in the Division of General Internal Medicine. He completed his internal medicine residency training here at the University of Pittsburgh Medical Center in 2013. He pursued the Academic Clinician Educator Scholars Fellowship in General Internal Medicine in 2015 in which he completed a master's degree in medical education at the Institute for Clinical Research Education at the University of Pittsburgh. He started his faculty position in the Division of General Internal Medicine in 2015 as a core faculty in the residency program. He is Clerkship Director for the Adult Outpatient Medicine Clerkship and Director of the Internal Medicine Residency’s Generalist Track. He currently practices both inpatient and outpatient general medicine with clinical interests in underserved populations.
“Beyond Zoom - Effective Use of Remote Learning Technology”

James B McGee
MD

McGee is currently the Assistant Dean for Medical Education Technology and an Associate Professor of Medicine in the Division of Gastroenterology, Hepatology and Nutrition at the University of Pittsburgh School of Medicine. He directs the Laboratory for Educational Technology that he established at the school in 2001 as a research and development center that seeks software solutions for learning in medical education.
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Identifying Gaps in Resident Education for Children with Medical Complexity

Bowen, J¹, Imming, C², Cook, S³, Henderson, C⁴

¹ Resident Physician, Department of Pediatrics, UPMC Children’s Hospital of Pittsburgh
² Assistant Professor of Pediatrics, Diagnostic Referral Group, UPMC Children’s Hospital of Pittsburgh
³ Assistant Professor of Pediatrics, Medical Director of Complex Care Center, UPMC Children’s Hospital of Pittsburgh
⁴ Clinical Research Assistant, UPMC Children’s Hospital of Pittsburgh, Complex Care Center

Background: Pediatricians often do not receive formal training for children with medical complexity (CMC) and report discomfort managing their care. Our goal in this study is to assess residents’ self-perceived capabilities managing aspects of CMC care and to identify topics in highest need of further education.

Hypothesis: Pediatric resident knowledge and comfort about managing aspects of CMC will improve with increasing PGY number.

Methods: Pediatric residents at an academic institution completed a voluntary, anonymous needs assessment. Trainees rate their management capabilities for ten CMC specific topics on a five point Likert scale of agreement: knowledge to care for CMC independently, defining patient centered medical home (PCMH), CMC inpatient care, nutrition and alternative nutrition decisions, feeding complications, tracheostomy complications, working in an interdisciplinary team, dysautonomia and irritability, aspiration-related and chronic lung disease, and difficult discussions. Responses were dichotomized such that “agree” and “strongly agree” were categorized as positive, while “neutral,” “disagree,” and “strongly disagree” as negative. Associations between post-graduate year of training (PGY) and self-perceived management rating amongst each topic were examined using chi-square analysis.

Results: 65 residents responded: 47% PGY1, 25% PGY2 and 28% PGY3/4. A majority (77%) reported receiving no formal teaching on CMC care and that more teaching would be helpful (95%). Higher PGY was associated with increased inpatient management capabilities for CMC, with 17% PGY1, 50% PGY2, and 93% PGY3 affirming (p<.001). Despite a statistically significant association between increasing PGY class and several core topics, approximately half of PGY 3/4 residents reported feeling capable managing CMC independently (47%, p=.002), managing irritability/dysautonomia (54%, p<.001) and making nutrition decisions (47%, p=.01). Higher PGY was not associated with increased capability managing tracheostomy issues (p=.057), conducting difficult discussion (p=0.73), feeding complications (p=.08), or aspiration and chronic lung disease (p=0.14). Amongst these topics only 33% of PGY 3/4 felt capable managing tracheostomy issues, 54% conducting difficult decisions, 40% feeding complications, and 31% aspiration and chronic lung disease.

Conclusion & Significance: A large portion of trainees at an academic pediatric institution do not feel capable managing aspects of CMC care. Increasing training year is not associated with management capabilities for several CMC topics, highlighting the need for improvements in CMC education for trainees.

Support: HRSA Primary Care Career Development Award; grant number K02HP32101
Required Ophthalmology Rotation Provides Medical Students with a Foundation in Eye Related Diagnosis and Management

Eve M.R. Bowers, BA1, Brittany Perzia, BS2, Rikki Enzor, MD, PhD3, Owen Clinger, BS1, Sanya Yadav, BS1, Patrick W. Commiskey, MD3, Peter Mortensen, MD3, Evan Waxman, MD, PhD4

1Medical Student, University of Pittsburgh School of Medicine
2Medical Student, Stony Brook School of Medicine
3Ophthalmology Resident, Department of Ophthalmology, University of Pittsburgh Medical Center
4Residency Program Director and Associate Professor, Department of Ophthalmology, University of Pittsburgh Medical Center

Need and Objectives: Current ophthalmologic training in medical school is inadequate in preparing medical students to handle basic eye complaints as non-ophthalmology residents1. Most medical students are uncomfortable performing eye examinations, but increased ophthalmology training improves confidence in this area2. The University of Pittsburgh School of Medicine (UPSOM) teaches students the basics of ophthalmology with a required week-long rotation during the one-month Specialty Care Clerkship (SCC), providing students with skills to perform rudimentary eye examinations as non-ophthalmology providers.

Setting and participants: UPSOM third- and fourth-year medical students on clinical clerkships (n=67) participated in the one week required ophthalmology rotation at one of three University of Pittsburgh Medical Center (UPMC) clinical sites over six months.

Description: Students became familiar with ophthalmic equipment, terminology, diagnosis, and management by working with residents in clinic, spending an evening on call, and observing in the operating room. Students also attended case-based workshops covering a variety of common eye diseases, were loaned the book Basic Ophthalmology: Essentials for Medical Students, and attended Grand Rounds. Students were evaluated through an in-house SCC exam and graded clinically on a 5-point scale by preceptors.

Evaluation: The average clinical and exam score for ophthalmology over six months was 4.5/5 and 83.0% respectively, and students consistently scored higher on the ophthalmology section of the SCC exam than on the total SCC exam. 100% of students rated the quality of case-based workshops “outstanding” or “very good,” and 83% of students strongly agreed or agreed with the statement “overall teaching in clinical setting was good quality” (n = 64). Open-ended feedback revealed that students perceived case-based workshops to be particularly beneficial to their learning along with resident teaching and physical exam practice.

Discussion/reflection/lessons learned: Generally positive student feedback as well as high clinical and exam scores suggest that the required UPSOM ophthalmology clerkship is both engaging and effective. This course’s 20-year existence reinforces the effectiveness of its educational methods. While it could be easily adapted to instruct students at many medical institutions, program size is likely a limitation to implementation. Partnering with community ophthalmologists may address this problem. The UPSOM ophthalmology clerkship surpasses the minimum competency standards outlined by the Association of University Professors of Ophthalmology, and we hope that this course will reverse the current decline in required ophthalmology instruction, address the insufficiencies in ophthalmologic training in medical schools, and increase student confidence and competency in this area.
Development of a reliable and valid checklist for scrubbing, gowning and gloving

Stephen P. Canton, MS1; Christine E. Foley, MD2; Isabel Fulcher, PhD3; Laura K. Newcomb, MD, Noah Rindos, MD1,2; Nicole M. Donnellan, MD1,2
1University of Pittsburgh School of Medicine
2Division of Obstetrics, Gynecology and Reproductive Sciences, Magee-Womens Hospital of UPMC
3Department of Global Health and Social Medicine, Harvard Medical School

Background
Surgical scrubbing, gowning and gloving is a necessary skillset to participate in surgery. However, these skills are difficult for medical trainees to learn in the fast-paced operating room setting. There are no reliable or valid tools to evaluate a trainee’s ability to scrub, gown and glove and the few published studies that exist lack methodologic rigor when describing the development of procedural checklists. There is a need for a reliable and valid tool to help trainees learn this skill, inform simulation models, and assess skill acquisition. The objective of our study is to validate and test the reliability of a checklist that evaluates the technique of surgical scrubbing, gowning and gloving (SGG checklist).

Hypothesis
We hypothesize that this tool will be able to detect a difference in skills between learners with different levels of surgical experience.

Methods
This IRB-approved study recruited medical students, residents, and fellows from an academic tertiary care institution. The trainees were stratified based upon prior surgical experience as novices, intermediates or experts. Participants were instructed to scrub, gown and glove in an inpatient operating room while being video-recorded. Two blinded raters scored the videos according to the SGG checklist. The maximum score for the checklist was 22, the sum of each completed item. We evaluated the reliability of the SGG checklist using the intraclass correlation coefficient for total scores and Cohen’s kappa for item completion. The internal consistency and discriminant validity of the SGG checklist were assessed using Cronbach alpha and the Wilcoxon rank sum test, respectively.

Results
We recruited 18 novices, 19 intermediates and 19 experts. All participants completed the video-recorded scrubbing, gowning and gloving activity. The intraclass correlation coefficient demonstrated excellent interrater reliability for the overall checklist (0.990), and the Cohen’s kappa ranged from 0.598 to 1.00, indicating moderate to near perfect agreement between the raters for each checklist item. The checklist also had excellent internal consistency (Cronbach’s alpha 0.950). The overall median test score was 19.750 with an interquartile range of [11.375, 21.125]. The median test score was 9 among novices, 20 among intermediates, and 21.5 among experts. A significant difference in scores was observed between all groups (p < 0.001), and there was a greater variability in scores among the novices than the intermediates and experts.

Conclusion(s)
We validated and assessed the reliability of the 22-item task-based checklist for scrubbing, gowning, and gloving. This checklist demonstrates a high interrater reliability, discriminant validity, and internal consistency.

Significance
The SGG checklist has the potential to enhance medical education curricula, specifically to inform a simulation and assessment tools.
Moving beyond the temporal bone lab: practicing pediatric temporal bone drilling within the pediatric otolaryngology clinic.

BRADLEY EICHAR BS,1 MONIKA E. FREISER MD, MPH,2 CHRISTIAN MORILL BS,1 KHALIL BADDOUR MD,2 ANISH GHODADRA MD,3 NOEL JABBOUR MD, MS2,4

1University of Pittsburgh School of Medicine, Pittsburgh, PA.
2Department of Otolaryngology, University of Pittsburgh Medical Center, Pittsburgh, PA.
3Department of Radiology, University of Pittsburgh Medical Center, Pittsburgh, PA.
4Division of Pediatric Otolaryngology, Children's Hospital of Pittsburgh of UPMC, Pittsburgh, PA.

Introduction: Access to a temporal bone laboratory is not always feasible or convenient, and access to pediatric specimens is rare. With the advent of operable 3D printed temporal bones, so comes the opportunity to simulate pediatric otologic surgery outside of the temporal bone laboratory. The objective of this study was to design and evaluate a mobile drilling station that can be used for surgical practice in a variety of clean physician workplaces including clinics, offices and operating rooms.

Methods: Using materials obtained from hardware stores and online retailers, a wheelable drilling station was constructed to mimic laboratory conditions while also being easily maneuverable into clinic rooms. The station houses the otologic drill, suction and irrigation mechanisms, is height adjustable, and has a shielded workspace. The mobile drilling station was moved into a microscope-containing pediatric clinic room where faculty and trainees were asked to try drilling a pediatric 3D printed temporal bone followed by completing an evaluation survey.

Results: The cost to build the mobile drilling station was $250. Seven pediatric otolaryngology faculty, fellows and residents completed the evaluation and all felt the overall impression that the station was useful or extremely useful. All felt that the station would be convenient or extremely convenient to use during a typical work week. The majority were likely or extremely likely to use it to teach or practice pediatric temporal bone surgery, with all participants being more likely to use this station than a temporal bone laboratory. All felt it would be helpful or extremely helpful for a trainee to drill a patient-specific model for case preparation. Free response comments supported strong enthusiasm for the station but noted that the utility of the station depends on the quality of the 3D printed models.

Conclusion: This is the first mobile drilling station described in the literature that can be easily constructed, mobilized and used in a pediatric otolaryngology clinic for dedicated surgical practice using 3D printed models.
Results of a Merged Pharmacology Classroom on Standardized Test Scores

Ashley Firm PharmD 1,2; Emily Murphy MPAS, PA-C1; Lucas Berenbrok PharmD, MS, BCACP, CTTS2; Lorin Grieve PharmD2; David Beck MPAS, PA-C, DFAAPA1
1Department of Physician Assistant Studies, University of Pittsburgh School of Health and Rehabilitation Sciences
2Department of Pharmacy and Therapeutics, University of Pittsburgh School of Pharmacy

Introduction Physician assistant (PA) students must demonstrate competency by applying didactic instruction content to clinical patient assessments during the final phase of training including safe medication selection and prescription communication.

The pharmacology course was revised in 2018 to include a flipped classroom model, group patient cases, virtual patient cases using a simulated electronic health record, and a final exam incorporating objective structured clinical examination stations. At the conclusion of each in-class session, students were required to produce prescriptions in one of three mediums: written, electronic or telephonic.

Hypothesis This poster presents the results of standardized testing scores after a change in curriculum delivery of a two-semester series pharmacology course in a PA program. The curriculum changes included incorporation of technology to deliver lecture content and collaboration with student pharmacists to provide increased exposure to problem-based learning and clinical activity simulation. The change in curriculum delivery will lead to an increase in standardized test scores.

Methods This study was considered exempt from IRB approval. A retrospective review of quantitative data including review of standardized testing scores was completed including End of Rotation (EoR) Exams, Physician Assistant Clinical Knowledge Rating and Assessment Tool (PACKRAT), and Physician Assistant National Certification Exam (PANCE). The analysis compared student performance prior to the pharmacology curriculum delivery remodel to the new flipped classroom model.

Results Results of standardized exams between the two teaching models were compared using unpaired, two sample t-test via GraphPaD. The Class of 2018 (pre-classroom remodel) had 44 graduating members and Class of 2019 (post-classroom remodel) has 47 graduating members included in the analysis.

EoR score was compared using the average of all EoR exams over the course of one clinical training year. EOR score mean increased from 76.61 to 78.83 (p= 0.0843). At the time of analysis, forty six students of the Class of 2019 completed the PANCE. The PANCE score increased from a mean of 456 in 2018 to 470.133 in 2019 (p=.4173). A sub-analysis of the PANCE scores was completed looking at the clinical therapeutics score, which was identified on the PANCE content blueprint as the task category for pharmaceutical therapeutics. This section did show a statistically significant improvement in scores (p=0.0166) between 2018 and 2019.

Significance The improvement in test scores demonstrate the value and increase in student learning with the new curriculum delivery method. As PA curriculum remains accelerated, all improvements in learning outcomes and efficiency in delivery methods should be explored for partial or full implementation into a program’s curriculum.

Grant Support The pilot of the flipped classroom was supported by an Innovation in Education Awards from the University of Pittsburgh Office of the Provost.
Participatory Education in Genetics and Precision Medicine for Family Medicine Residents Engages Learner While Meeting Competency Requirements
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Introduction: Historically, genetics has been utilized in research or for targeted clinical testing. Since the completion of the human genome project, there has been a robust surge in clinical applications of genetics as well as a growing direct to consumer genetic testing market. The prevalence of genetic testing and the rapidly decreasing costs have led to greater demand for these services. The model of clinical medical geneticists supported by genetic counselors will not be able to meet the mass demands for genetic services. Since genetics impacts medication prescribing, family histories and disease risk assessment, prenatal care and complex chronic diseases, it only makes sense that a bulk of genetic services will be delivered in the Primary Care setting. Currently, the largest barrier to the integration of genetics in Primary Care is the genetics knowledge deficit amongst providers (Haga, Kim, Myers, & Ginsburg, 2019). Genetics education in medical school has been minimal and primarily focused on basic genetics and aneuploidy disorders. Although, the American Academy of Family Practice published competencies in genetics and genomics in 2007, there has been no curriculum development or implementation to meet these competencies. Therefore, current physicians are not graduating with the knowledge necessary to meet the rapidly growing needs of this technology and its application to health care. Test2Learn was developed to teach these competencies with an optional genetic testing participatory aspect to provide an engaging opportunity for Family Medicine residents to learn about genetics and implementation of Precision Medicine.

Hypothesis: If residents complete a participatory genetics educational program on the Test2Learn course platform, then they will have increased knowledge of genetics and implementation of Precision Medicine.

Methods: Survey data was collected at all three sites from family medicine residents and faculty who participated in the course. Pre- and post- course surveys were created and made available to participants through Qualtrics. Survey data was analyzed using SPSS.

Results: According to survey data analysis, understanding of both basic and complex genetic knowledge increased after completion of the course. The percentage of participants that agreed they would be comfortable speaking with patients about genetics in general increased from 20.6% to 26.7% for basic genetic principles and from 4.8% to 20% for complex genetic principles. Before the course 44.4% of participants agreed they’d be comfortable discussing genetics in general with patients which increased to 73.3% after the course. Also, only 85.7% of participants were previously aware of direct-to-consumer testing, which increased to 100% after this course due to the participatory nature of the educational program.

Conclusion: These preliminary data show that participation in the Test2Learn course increased general genetic knowledge in family medicine residents. In addition, participation in the course increased the comfort level of discussing genetic related issues with patients. Future analysis will include comparing data from rural vs urban residency programs as well as comparing testing platforms from SNP panels to WGS and ongoing delivery of the course to additional residency programs.

Significance: Demonstrate that Test2Learn Genetics and Precision Medicine course can increase understanding of basic genetic terminology, testing, and clinical applications to family medicine residents. The program has been implemented at UPMC Altoona Family Medicine and UPMC Shadyside Family Medicine in Pennsylvania and the Family Medicine Rural Residency Programs of Caldwell and Nampa Idaho.

Research/Grant Support: 23andMe Investigator Initiated Educational Research Grant (Co-PI: Mylynda Massart MD, PhD, Phil Empey PharmD, PhD)
Pitt Med Student Mentorship Alliance (PMSMA): Facilitating Mentorship in Undergraduate Medical Education

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Needs and Objectives
Mentorship is a key part of navigating the medical education process. For pre-medical students, mentorship helps in understanding the application process and the complexities of a medical career, while for medical students, serving as a mentor is an opportunity to build leadership and communication skills. However, medical students often do not have opportunities to build such skills within the formal medical school curriculum. Thus, the Pitt Med Student Mentorship Alliance (PMSMA) was founded to provide academic support for pre-medical students and early mentorship training for medical students.

Setting and Participants
PMSMA was founded in 2017 as a student organization at the University of Pittsburgh School of Medicine with guidance from the Assistant Dean for Medical Education, Dr. Cynthia Lance Jones, and the Pitt Interprofessional Center for Health Careers. In the 2019-2020 academic year, 72 medical student mentors were paired with 123 Pitt undergraduate, 3 Chatham undergraduate, and 5 Chatham graduate students. 97 medical student mentors and 112 Pitt undergraduate students returned from the previous year.

Description
PMSMA has two main components: (1) direct mentorship and (2) community seminars. Medical students were matched with pre-medical students based on hometown, undergraduate institution and major, personal hobbies, and career and research interests. Semesterly community seminars were conducted and open to Pitt and Chatham undergraduates. Our fall seminar focused on the medical school application process and our spring seminar provided preparation strategies for the Medical College Admissions Test (MCAT).

Evaluation
Program quality and participant satisfaction were evaluated using survey responses from mentors (n=21) and mentees (n=34), and compared against results from previous years. Survey questions were posed in 10-point Likert scale, multiple choice, or testimonial formats. 76.2% of mentors reported no previous mentorship experience in an academic medical setting. Compared to 2019, mentor overall satisfaction remained stable (mean rating 8.143 vs 7.545, p=0.28) and mentee overall satisfaction increased (mean rating 8.794 vs 7.350, p<0.01) by student’s t-test. Other metrics of assessing quality include meeting frequency, ease of access to mentors, meeting objectives, support systems, and seminar evaluations.

Reflection
This was the first year that our program expanded beyond the University of Pittsburgh. The successful incorporation of Chatham University gives us a model for how to include other local universities in PMSMA in the coming years. Additionally, a future aim is to assess the impact of PMSMA mentorship on long-term outcomes such as medical school application success for mentees and skill development for mentors.

Support
Office of Medical Education, University of Pittsburgh School of Medicine
Health Professionals Advising, University of Pittsburgh
Health Professionals Advising, Chatham University
Assessing and Increasing Knowledge Base and Comfort Level in Treatment of Perinatal Mental Illness: An Educational Intervention for Obstetrics/Gynecology Residents

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Background: It was common to advise pregnant patients with psychiatric diagnoses to stop medications due to perceived negative effects on the fetus and pregnancy. There is minimal literature assessing knowledge, attitude towards, or comfort levels of obstetrics and gynecology (OB/GYN) residents in managing psychiatric conditions, which if untreated can presents adverse risks to both mother and fetus. A gap remains between the evidence advocating active pharmacological treatment of perinatal psychiatric conditions and the knowledge base, attitudes, and comfort level of OB/GYN physicians.

Hypothesis: Our project aims to assess the knowledge base, attitude towards, and comfort that OB/GYN residents have towards assessing and managing active psychiatric conditions in pregnant/postpartum women and to develop an educational, case-based intervention targeting these conditions in pregnancy/postpartum. We predict that OB/GYN residents will feel it is both important and their responsibility to discuss and manage the mental health of their pregnant patients. We also predict that OB/GYN comfort level in counseling psychiatric patients will increase after the educational intervention.

Methods: A needs assessment was created to assess levels of current knowledge, attitudes, and comfort of OB/GYN residents in mental health, which was used to create educational case-based learning exercises. The assessment was administered again after the intervention to assess the effectiveness of the intervention.

Results: Pre- (N=19) and post-intervention (N=15) surveys of residents were analyzed. Most residents (94%) felt it was both important and their responsibility to discuss and manage the mental health of their pregnant patients. Comfort levels with counseling psychiatric patients on a variety of psychiatric conditions significantly increased after educational intervention was implemented (p<0.05).

Discussion: OB/GYN residents’ feel responsible for caring for their pregnant patients with mental illness and case-based interventions offer an interactive, helpful tool for increasing residents’ knowledge and comfort level in treating this patient population.

Significance: Given the success of the interactive, case-based educational tool, our project has the potential to be expanded to include other specialties that interact frequently with pregnant patients (Family Medicine, Internal Medicine) along with offering a template for training programs nationally.

Research/Grant Support: N/A
Systematic Use of Application Data to Guide Family Medicine Residency Match Rank Order Determination

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Background and Objectives
While effectively “matching” medical school graduates to residency training programs is crucial to the student/applicant’s future success and well-being, as well as the residency program’s ongoing operation, little consensus exists to guide residency programs in the best use of student application data for the purpose of ranking and eventually “matching” the most qualified residency candidates. In particular, no studies have been published that have examined the relationship between application data and resident performance in a family medicine residency setting.

Hypothesis
Statistical analysis of residency application data can identify those items which correlate with subsequent resident performance

Methods
This retrospective cohort study gathered and scored application data from the 2017-2018 and 2018-2019 match seasons for applicants to our residency program, and compared it to a subsequent assessment of each applicant’s performance and potential as a resident, obtained via a survey of residency program directors.

Results
Outcome information was obtained for 85 of 154 (55.2%) applicant/residents. Statistical analysis showed significant correlations between three application elements (academic transcript, MSPE, and NBME scores) and the outcome measure (performance and potential); subsequent linear regression analysis using these three variables enabled the construction of an equation to calculate a “rank” score. Plotting this score against subsequent program director assessments showed a direct relationship between the two.

Conclusions
The results of this study suggest that a student/applicant’s future performance and potential as a family medicine resident could be predicted based on standard application data. Further study involving more applicants and more programs is needed to confirm this finding. Additionally, following this and subsequent cohorts over time could provide information regarding the long-term performance of the residents involved.

Significance
Basing Match rankings and decisions on statistically correlated variables may enable Family Medicine residencies to scientifically select the best candidates in their applicant pool.

Grant Support
None
From the Small Screen to the Computer Screen: Utilizing Medical TV Shows to Teach Interprofessional Communication to Graduating 4th Year Medical Students

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Needs and Objectives: Effective interprofessional (IP) communication is crucial to quality patient care, and prior research suggests medical TV shows may provide an innovative avenue for teaching communication skills to medical students. Therefore, as part of a “Bootcamp” course required for students graduating from the University of Pittsburgh School of Medicine in 2020, we developed a workshop utilizing clips from these shows to teach IP communication skills.

Setting and Participants: Although the workshop was originally designed to be in-person, it was conducted using Zoom videoconferencing software due to COVID-19. Approximately 60 4th year medical students were assigned to attend each session, one on March 19th and one on April 9th from 8-10am; attendance was not required.

Description: We used clips from ER, Grey’s Anatomy, and Scrubs. Students viewed several clips and engaged in a facilitated discussion about the IP communication in the clips. We evaluated the workshop using pre and post-test surveys assessing students’ demographics, prior experience with IP education, medical TV exposure, and adapted CSAS (Communication Skills Attitude Scale) and SPICE-R (Student Perceptions of Interprofessional Clinical Education-Revised) instruments. We calculated descriptive statistics to summarize quantitative data, and used thematic analysis for open-ended questions.

Evaluation: Approximately 30-40 (50-75%) students attended each workshop. Pre-curricular surveys were completed by 65 participants; 33 also completed the post-curricular survey. Most respondents indicated previous IP education during clerkships (83%). The majority of respondents felt the workshop was valuable and would recommend it to other students. Changes in pre and post-curricular scores on the CSAS and SPICE-R were not statistically significant, but there was a trend toward improved attitudes after the workshop. Students’ open-ended comments included an increased willingness to speak up when working within an IP team; the primary suggested improvement was video audio quality.

Discussion/reflection/lessons learned: The majority of students in the course attended the session which occurred after their residency match was already determined and during a pandemic, suggesting high levels of intrinsic motivation. Although response rates for the surveys were low, the majority of respondents provided positive feedback about the workshop. Responses suggest the workshop may be efficacious at improving graduating medical students IP communication skills, and future research with larger sample sizes and longer follow up intervals may help further assess efficacy. The relative ease of transitioning the workshop to Zoom also suggests workshops using video clips from medical TV shows may be a good option for hybrid learning moving forward.
Change is Never Easy: Transition from Undergraduate To Professional School

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Needs/objectives: While being accepted into a dental school is a major milestone for students, it also comes with the challenges of transitioning into a professional student mindset. The goal of this project is to identify differences in students’ perception between their experiences in undergraduate education and expectations in dental school in order to help incoming students form realistic expectations and be better prepared for the challenges faced in dental school.

Setting/participants: Data was collected from 2015 through 2018 via anonymous student surveys about their perceived differences between their undergraduate and dental school experiences and expectations, both from cross-sectional (D1-D4 in 2015) and longitudinal (class of 2019) cohorts.

Description: First-year students were initially asked about their expectations of dental school, while upperclassmen were asked about experiences which differed from their time as an undergraduate student. Responses from the surveys were quantitatively analyzed; content analysis was used for open-ended responses from students.

Evaluation: The data provided quantitative information on areas in which students perceived differences in their expectations and experience of dental school. The data provided insight into how, if any, the students’ perception of dental school changes as they progress through their dental education. Students mostly commented on both their expected and experienced differences between classes, instructors, and experiences outside the classroom.

Discussion: The comprehensive survey on student experiences demonstrated many of the students' expectations matched their experiences. In addition to increased workload, many students accurately predicted different teaching styles and faster-paced classes in dental school. Through this survey, areas have been identified in which schools can provide further support to struggling students to better equip them throughout their years in dental school, ultimately providing success to both the institution and the student.

Support: This project was not funded.
Medical Student Instruction in Peripheral Nerve Blockade Utilizing Fresh Cadaver Limbs in a Simulation Center

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INTRODUCTION
In this educational study, we introduced fresh cadaver specimens to address the gap in a simulation center and to increase anatomic realism. We hypothesized that medical students with 4.5 hours of instruction can perform simulated peripheral nerve block (PNB) in a fresh cadaver upper extremity successfully in accordance with a standardized motor skills checklist.

METHODS
First- and second-year medical students voluntarily enrolled and completed the course that was conducted in four 90-minute sessions at a simulation center over one month. The first two sessions focused on basic ultrasound skills and identification of regional anatomy with ultrasound phantoms as well as scanning live models under supervision. The third session focused on the use of fresh cadaver upper extremities for simulation of PNB around the elbow - targeting the radial, ulnar, and median nerves. In the final session students were asked to identify six anatomic structures of the fresh cadaver elbow (three nerves, two muscles, and one bone) under ultrasound. They subsequently performed a PNB on a terminal nerve of their choice on the fresh cadaver. Motor skills were evaluated against a standardized, eight-point checklist, which included probe holding, screen orientation, needle alignment, target identification, needle visibility during advancement and injection, needle adjustment around the target, and recognition of local anesthetic spread.

RESULTS
Seven students completed the mini-elective and all correctly identified biceps, triceps, humerus, and the median nerve. The mean time to perform PNB was 4.6 +/- 3.8 minutes and three (43%) students required more than one needle insertion (2-3 times). In the motor skills assessment, all students required prompting to visualize the needle during advancement. Four (57%) required prompting to visualize the needle during injection and needle adjustment around the target. Two (29%) required prompting to hold the probe and align the needle correctly. Six students (86%) appropriately recognized the local anesthetic spread. Post-course evaluations revealed that 100% of students “strongly agreed” that the cadaver component of the course added significant value to their learning experience. The majority (80%) “strongly agreed” that their confidence in performing PNB under ultrasound guidance increased due to the course.

DISCUSSION
We developed a highly realistic simulation with fresh cadaver extremities to teach preclinical medical students US-guided peripheral nerve blockade. The introduction of fresh cadaver extremities in a medical student PNB mini-elective is feasible and effective.

GRANT SUPPORT: IRB Study #19050235 and $8000 Education Seed Grant from the Department of Anesthesiology and Perioperative Medicine
“Check out” those skills! Resolving the need for increased suturing and surgical knot tying practice for medical students at the University of Pittsburgh School of Medicine

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Needs and objectives: Skills training plays an increasing role in residency training; however, at the University of Pittsburgh School of Medicine (UPSOM), opportunities have historically been limited for students to practice surgical and procedural skills, especially suturing and knot tying, prior to, during (outside of the operating room), and after surgical clerkships. As suture kits can cost upwards of $40, our objective was to provide students the opportunity to practice and improve their skills at suturing and tying surgical knots without cost serving as a prohibitive factor. Herein, we aim to describe and evaluate the implementation of a new sustainable suture kit check out service for UPSOM students as a model for other medical schools that are seeking to increase skills training opportunities for medical students.

Setting and participants: As of January 2020, loaner skin pads and suture kits have been available in the Office of Medical Education, as well as the surgery and obstetrics & gynecology clerkship offices. Request forms can be filled out in person or online via the following link:


*In light of COVID-19, suture kits are currently only available through clerkship offices.

Description: Skin pads and suture kits can be loaned out for two-week periods, with the possibility for extensions by request. Supplementary training materials and tutorials are provided on the sharepoint link to aid in skill acquisition.

Evaluation: Prior to program initiation 74 UPSOM students (1 MS1, 22 MS2, 18 MS3, 5 MS4, 1 LOA) completed a Google Sheet indicating suture kit interest. Regarding suture kit utilization during the surgery clerkship, 55% (n=51) of students checked out a kit during the 2019-2020 academic year. Thus far for the 2020-2021 academic year, 100% (n=20) of students on the surgery clerkship have requested a kit. We have yet to evaluate the effectiveness of this innovative educational program; however, once more students have had the chance to obtain and utilize suture kits, we will create a pre and post-check out survey and pursue IRB/medical student research approval.

Discussion/reflection/lessons learned: We are excited about the launch and implementation of the skin pad and suture kit check out service through UPSOM, as a means to increase student comfort in the operating room and proficiency with surgical skills, including suturing and knot tying. We believe that providing this opportunity to medical students will level the playing field for surgical skill acquisition, as cost no longer serves as a prohibitive factor. We are eager to watch and assess the progression of this educational program.

Support: UPSOM Office of Medical Education; UPMC Department of Surgery; UPMC Department of Obstetrics & Gynecology
Collaborative Care: Analysis of a Pediatric Mental Health Elective

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Objectives: Pediatricians are frequently asked to screen for and treat behavioral health conditions but often feel like they lack the appropriate training. Typical training might allow for some exposure, but often not much education on diagnostic or treatment and little collaboration with child psychiatry.

Settings and Participants: A two-week mental health rotation was created for pediatric residents at UPMC Children’s Hospital of Pittsburgh to help increase their exposure to and comfort with behavioral health diagnoses and treatment through collaborative experiences with psychology and psychiatry.

Description: Every resident that participated in the rotation was asked to complete a pre-rotation and post-rotation survey, consisting of a Likert scale designed to measure experience and comfort with various behavioral health-related activities (psychiatric interviews, selection of screening tools, DSM5 diagnoses, referrals, and treatment of common disorders) before and after the rotation. Participating residents were also asked to complete a set of pediatric board questions focused on behavioral health before and after the rotation to assess knowledge base.

Evaluation: Resident comfort level with all 13 behavioral health-related activities showed significant improvement after the rotation compared to before the rotation (p< 0.05). In particular, residents felt more comfortable with their knowledge of available psychiatric resources (z-score 3.65, p< 0.001), prescribing medications for ADHD (z-score 3.63, p< 0.001), prescribing medications for depression (z-score 3.58, p< 0.001), prescribing medications for anxiety (z-score 3.9, p<0.001), and managing patients that express suicidal ideation (z-score 4.21, p<0.001). In addition, residents reported a statistically significant increase in number of experiences starting medications to treat ADHD (z-score 2.33, p= 0.02) and starting medications to treat anxiety (Z-Score 2.15, p= 0.03) after the rotation. There was no statistically significant change in number of board questions answered correctly before and after the rotation.

Discussion: Many pediatric residents feel as though they have had inadequate exposure to and are uncomfortable with behavioral health diagnoses and treatment, especially in the outpatient setting. The data confirms that most residents have exposure to common behavioral health diagnosis in their primary care rotations, but it is superficial and provides little in understanding of diagnosis and treatment. A brief two-week rotation, allowing for in depth exposure and collaboration with the behavioral health system, shows a significant increase in comfort with psychiatric interviews, diagnoses, and treatment.
Training Internal Medicine Residents to Perform High-Quality Telemedicine Video Visits: A Novel Skills Based Curriculum

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Needs and objectives
In response to public health measures required to limit infection during the COVID-19 pandemic, telemedicine use has rapidly increased in outpatient clinics. Due to the urgency with which telemedicine was introduced in General Internal Medicine resident continuity clinic, residents have been providing patient care through telemedicine video visits with little formal training, direct observation, or feedback.

Setting and participants
In General Internal Medicine resident continuity clinic, senior residents (post-graduate year-2 and post-graduate year-3) will receive the curriculum as a preclinic module and a direct observation. Currently, interns (post-graduate year-1) are not performing video visits and are excluded from the curriculum at this time.

Description
The novel 2-part curriculum seeks to improve residents’ competence with and attitudes towards telemedicine video visits. First, residents participate in an interactive, case-based small group session that introduces key skills for conducting telemedicine visits, including how to triage patients appropriately, communication skills, and physical examination skills. Second, residents receive direct observation and feedback from faculty on their telemedicine skills. A pilot session was delivered in May-June of 2020 and the study session will be delivered in July-August of 2020.

Evaluation
Residents will complete a pre-test and post-test survey to assess their self-perceived competence with telemedicine skills and attitudes toward telemedicine use.

Discussion/Reflection
This is a quality improvement educational initiative to improve resident clinic telemedicine visits as residents responded to a global pandemic by delivering care through a telemedicine platform. The received no formal training in telemedicine video visits before conducting them. This experience is shared nationally and across residency specialties so this curriculum will likely have broad applicability to other residency training programs.
Improving the Rate of Cognitive Impairment Screening in an Internal Medicine Residency Clinic

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Introduction
The benefits of early diagnosis of Alzheimer’s disease include: earlier treatment interventions to mitigate its biopsychosocial impact and an opportunity for the person with cognitive impairment to participate in plans for their future well-being before they lose further capacity to do so. Fewer than 16% of people over the age of 65 in the United States undergo screening for cognitive impairment.

Hypothesis
We hypothesized that an interactive skill-building workshop to train residents how to perform and interpret the Mini-Cog© and weekly reminders would increase the rate of cognitive impairment screening and the diagnosis of dementia in patients aged 70 years and older who receive primary care in an internal medicine resident clinic.

Methods
This IRB-approved before-and-after quality improvement study took place at the UPMC McKeesport Hospital Internal Medicine Resident Continuity Clinic. We performed a chart review of all clinic patients 70 years of age and older to determine the frequency of cognitive function screening and the number of people with a diagnosis and/or treatment of dementia during the 6 months before and after an education intervention. The intervention, a workshop, occurred during noon conference on January 29th, 2020. Weekly reminders were sent to IM residents before their continuity clinics from January 29th to June 26th of 2020. The interactive skill-building workshop included a brief didactic overview of the scope of the problem and the benefits of screening and trained residents how to perform and interpret the Mini-Cog©. We measured the rate of cognitive function assessment using any validated screening tool as well as the rate of diagnoses of any type of cognitive impairment except delirium.

Results
166 people over the age of 70 received primary care in the UPMC McKeesport IM clinic. During the 6 months before the workshop, 141 patients 70 years and older visited the clinic. The rate of cognitive impairment screening was 2.1% (3 of 141), and 2.4% (4 out of 166) had a diagnosis of cognitive impairment listed in the medical record. During the 6 months after the workshop, 105 patients visited the clinic. The rate of screening was 29.5% (31 of 105) and the number patients whose records listed a diagnosis of cognitive impairment was 7.2% (12 out of 166).

Conclusion/Significance
Cognitive impairment screening remains underutilized. This quality improvement project demonstrated that an education intervention led to a 27.4% increase in the rate of cognitive impairment screening by IM residents who care for older people who live in an underserved urban community, which is well above the national average. The concurrent COVID 19 pandemic led to abrupt and significant changes in the clinic’s primary care delivery and workflow that may have impacted the results. In the future, we hope to adapt this workshop to train IM residents how to do cognitive function screening via in-person and telemedicine clinic visits.
Simulation to Improve Mental Health Stigma Among Undergraduate Nursing Students

Kameg B
Health & Community Systems

**Background:** Nursing students continue to harbor negative attitudes towards psychiatric nursing and biases to patients with mental health problems. The purpose of this project was to examine the effect of standardized patient (SP) simulation on attitude towards psychiatric nursing and mental health problems. The benefit of utilizing SP simulation involving mental health problems has been shown to improve student knowledge and self-efficacy in managing mental illnesses, but little is known about whether SP simulation improves stigma towards psychiatric nursing and mental health problems.

**Hypothesis:** Exposure to SP simulation pertaining to mental health outcomes will improve self-reported stigma among undergraduate nursing students.

**Methods:** This study used a single group pre-post test approach. The Attitudes to Psychiatry 30-item scale (ATP-30) and the Attitudes to Mental Illness 20-item scale (AMI-20) were adapted for nursing students and administered to students before and after exposure to the SP simulation. Descriptive statistics and paired-t test were used to analyze the data.

**Results:** A total of 97 students (97.8%) completed the survey. A total score of the ATP-30 tended to improve, although this was not statistically significant. There were statistically significant improvements in the subscales of ATP-30: career choice and teaching ($p = 0.046$ and 0.007, respectively). A total score of the AMI-20 did not improve after exposure to the simulation, although this finding was not statistically significant. There were improvements in specific items on the AMI-20, involving origins of mental health problems and recommendations for community-based treatment ($ps < 0.05$).

**Conclusions/Significance:** Additional research is needed to identify strategies incorporated into simulation with SP to improve student stigma towards psychiatric nursing and mental health problems.
Grit and Burnout among First-Year Internal Medicine Residents

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Background: Grit, defined as passion and perseverance for long-term goals, has been associated with avoidance of burnout among residents in a number of specialties. The authors aimed to evaluate the relationship between grit and burnout among first-year internal medicine (IM) residents.

Method: During the 2018-2019 academic year, the authors recruited 75 first-year IM residents within a large academic program to complete the Short Grit Scale (Grit-s) and Maslach Burnout Survey General Survey (MBI-GS) at baseline and after 6 and 12 months. The primary outcome was the association between baseline Grit-s and MBI-GS scores within the domains of emotional exhaustion (EE) or cynicism (CYN) over time using linear mixed models. Secondary outcomes included the association between grit and high burnout at 6 or 12 months, grit and persistently high burnout, and the association of baseline high burnout with later high scores at 6 and 12 months using logistic regression models. Additionally, the authors assessed whether grit remains stable over time using repeated-measures ANOVA.

Results: A total of 53 of 75 (71%) first-year residents completed the Grit-S and MBI-GS at baseline and at least one other time point. There was no association between grit and EE (p=0.44) or CYN (p=0.61) burnout domain scores. High baseline EE and high baseline CYN significantly increased the odds of later high burnout scores within each domain (EE OR 9.66, 95% CI 1.16, 80.83; CYN OR 13.37, 95% CI 1.52, 117.75). Grit scores and professional efficacy (PE) scores remained stable throughout the year (p=0.15 and 0.46, respectively), while EE and CYN significantly increased (both p<0.01).

Conclusions: In this single-center study, grit was not associated with burnout among first-year IM residents. However, these findings highlight the value of baseline burnout scores in helping to identify first-year residents who may be at higher risk of later burnout.
The Effect of Geographic Cohorting of Inpatient Teaching Services on All-Cause Mortality


**Background:** Geographic cohorting is a way of structuring hospital admissions such that patients on a given physician team are admitted to a dedicated hospital unit. Little is known about how this admission structure impacts patient outcomes. We sought to evaluate the effect of geographic cohorting of the inpatient teaching services on patient outcomes within an academic community hospital.

**Methods:** We conducted an interrupted time series examining patient outcomes before and after the transition to geographic cohorting of inpatient teaching services in November 2017. The observation period spanned from January 2017 through October 2018, allowing for a two-month run-in period (November-December 2017) at the time of intervention. Study occurred at UPMC Shadyside Hospital, a 520-bed academic community hospital with 3 inpatient teaching services. We included all patients discharged from the inpatient teaching teams during the study period. We excluded patients admitted to the ICU and observation admissions. Primary outcome was six month patient mortality adjusted for pertinent patient characteristics and time-varying covariates. Secondary outcomes included hospital length of stay (LOS) and 7-day and 30-day readmission rate to an affiliated facility. Logistic and linear mixed effects models were constructed to assess the impact of this intervention on patient outcomes and their rates of change.

**Results:** During our observation period, the inpatient teaching services discharged 1861 unique patients (mean age 64, 57% white, 53% female, 62% Medicare-insured) with 1716 patients eligible for inclusion in the final adjusted model, including 888 prior to and 911 after our intervention. We did not detect a significant change in 6-month mortality, LOS, 7-day or 30-day readmission rates after adjusting for age, sex, race, insurance status, and Charlson Comorbidity Index (CCI). HCAPHS scores remained unchanged (77% to 79% top box, p=0.19), while resident evaluations significantly improved (mean overall score 3.7 to 4.0, p=0.03).

**Conclusions:** Geographic cohorting did not significantly impact patient outcomes or experience on our inpatient teaching services, however, resident experience subjectively improved. Active and persistent engagement of key interprofessional stakeholders is essential to the success of this transition.
"Becoming a safe space" for patients: qualitative evaluation of a novel IPV curriculum for internal medicine residents

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Background:
Intimate partner violence (IPV) is a common health problem, yet physicians do not routinely screen patients for IPV. There are no clear recommendations for best educational practices for physician trainees and limited data on interventions that improve screening rates.

Hypothesis:
We hypothesized that a curriculum that developed practical skills in screening and response would lead to increased IPV screening rates in the primary care setting. We also hypothesized that residents would show improved comfort and attitudes regarding screening and managing IPV in the primary care setting post-curriculum.

Methods:
We developed a multifaceted IPV curriculum for first year internal medicine residents that involved didactic exercises, a guided communication skills workshop, and simulated patient exercises. We employed both quantitative and qualitative methods to assess curriculum effectiveness; we present the qualitative portion here. We assessed resident comfort, attitudes, perceived screening barriers, and screening behaviors post-curriculum via semi-structured interviews. All curriculum participants were invited to complete a twenty minute in person or phone interview four-weeks post curriculum with a trained qualitative interviewer. The interview guide was developed with assistance of IPV and qualitative research experts. Questions addressed resident comfort with screening both pre- and post-curriculum, perceived barriers to screening, proposed action plans for responding to a positive screen, and overall curriculum reflections. We used probes where applicable to further elicit provider responses. Interviews were audiotaped and transcribed verbatim. Data analysis was performed iteratively by two coders using a content analysis approach to extract patterns from the data.

Results:
Forty residents completed the curriculum between January and October 2019. Fifteen residents participated in the qualitative interviews; there were 13 one-on-one interviews and one group interview. In the semi-structured interviews, participants reported experiencing both practice-based improvements and ongoing screening barriers. Practice-based improvements included increased screening comfort and frequency, improved preparedness to manage positive screens, and strengthening of the doctor-patient relationship. Ongoing screening barriers included time, resistance to practice change, competing medical needs, and personal discomfort.

Conclusions/Significance:
A multi-faceted resident IPV curriculum improved reported screening comfort and preparedness, as well as reported screening frequency. Ongoing screening barriers exist that mirror prior work among trainees and practicing physicians. These barriers are important to address to further improve physician IPV screening rates.

Funding:
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Suicidality and Healthcare Utilization Among Female Cannabis Users in a US Hospital

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Background

Information regarding the links between suicidality and healthcare utilization among female cannabis users is lacking. Consultation-liaison (C-L) psychiatry is uniquely positioned to evaluate suicidality and assess cannabis use among women. Magee-Women’s Hospital of University of Pittsburgh Medical Center (UPMC) thus represents opportunities to engage treatment and provide intervention.

Objectives

To characterize suicidality and healthcare utilization of female CUD patients

Methods

Retrospective chart review was performed for female patients who 1) carried diagnosis of CUD, 2) were admitted to Magee in 2017-2019, 3) required C-L Psychiatry services (N = 120).

Demographic, psychiatric diagnoses, comorbid substance use, suicidality, and history of healthcare utilization were determined and compared.

Results

There were significantly more anxiety diagnosis carriers among cannabis-related admissions (N = 15) compared to non-cannabis related admissions (N = 105) (mean number of anxiety diagnosis per person = 1 ± 0 vs. 0.42 ± 0.50, p = 0.007).

Cannabis-related admissions were significantly more likely to have suicidal ideation upon C-L psychiatric evaluation (OR, 3.22; 95%CI, 1.02-10.19, p < 0.04) and within the 12 months prior to admission (OR, 41.47; 95%CI, 1.83-937.94, p < 0.02).

Cannabis-related admissions were significantly more likely to have hyperemesis upon C-L psychiatric evaluation (OR, 213; 95%CI, 7.49-6056.30, p < 0.002).

Within the past 12 months prior to their admission at UPMC, cannabis-related admissions had higher frequency of cannabis-related inpatient hospitalization (mean frequency of inpatient hospitalization per person = 5 vs. 0) and higher frequency of cannabis-related outpatient ED visit (mean frequency of outpatient ED visit per person = 2.4 vs. 0), however, these differences were not significant.

Conclusions

Physicians are more likely than ever to encounter patients with cannabis use due to legalization. This study provides information to help primary care physicians and psychiatrists to engage and educate female patients on risks surrounding cannabis use.
Quantifying the Pipeline of Ethnically Under-Represented In Medicine (UIM) Physicians in Academic Plastic Surgery Leadership

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Background: A recent report noted a total increase of +0.3% and +1.7% representation of Black and LatinX American plastic surgery faculty over the course of twelve years. Without accounting for rising minority populations, it would still take over 8,013 and 863 years respectively for Black and LatinX Americans to attain parity in academic plastic surgery. We hypothesize the status of ethnically UIM physicians in the plastic surgery pipeline to still be underrepresented, from medical student graduates to national leadership positions.

Methods: The Electronic Residency Applications Service, San Francisco Match, National Resident Matching Program, Association of American Medical Colleges, American Council of Academic Plastic Surgeons, Plastic Surgery Education Network, and professional websites for journals and national societies were accessed for racial demographic information from 2008 to 2019.

Results: Over the past decade, there has been no change or slight decrease in representation of Blacks in plastic surgery residency applicants, trainees, and academic faculty, at half or less than expected, compared to U.S. Census data. The first point of drop-off occurs at the resident (3.8% of integrated and 5.6% of independent residents) to faculty level (<2.8%); almost half are lost at this point. Two percent (2%) of Program Directors (PDs) and Department/Division Heads (DHs) are black. The next point of drop-off occurs at the local to national level; there has never been a black president of ASPS or PSF, and there are no black Editors-in-Chiefs of plastic surgery journals.

Following LatinX American surgeons down the pipeline over the past decade, there has been no change or decrease in representation in residency applicants, resident physicians, and academic faculty, at one-third or less than expected compared to U.S. Census data. The first point of drop-off occurs at the faculty (4.8%) to leadership level (0% of PDs and DHs) where there is no representation of LatinX. Once this drop-off occurs, there is no recovery at the national level-- LatinX members comprise 1.54% of editorial boards, and there has never been a LatinX president of ASPS or PSF, and there are no LatinX Editors-in-Chiefs of plastic surgery journals.

Conclusions: In order to prepare our profession for imminent change in our nation’s demographics, academic plastic surgery is in need of a paradigm shift now. Attrition of UIM physicians in plastic surgery begins at medical school graduation and persists through surgical training, faculty appointments, and leadership positions. Creative and innovative commitment to diversity and inclusion is necessary.
TEACHING WAIT TIME PREDICTS INTRAOPERATIVE PERFORMANCE

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Introduction
Surgeon educators need to detect struggling surgical learners as early as possible. One way is to measure how efficiently they respond to coaching. The goal of this study was to test whether “teaching wait time” during a coaching session is a unique measure of skills. Wait time is the duration a teacher waits for a learner to respond. Do teachers guide less skilled learners more closely in time, and with more instructions, than more skilled learners?

Hypothesis
We predicted that the average wait time between an Instruction and another Instruction or Clarification would be smaller for participants of less skill. As a test of whether wait time is a unique assessment, we predicted that PGY would not capture the variance in wait time.

Method
11 OBGYN residents were coached one-on-one in a simulated suturing skills session with author SM. Participants’ hands were filmed as they practiced, and the teacher’s voice was audio recorded. The teacher’s verbal guidance was analyzed and the frequencies and times in between types of instruction were counted. Paired t-tests were used to show relationships between aspects of Teaching Wait Time and participants’ average score in the Global Operative Assessment of Laparoscopic Skills (GOALS). One-way analysis of variance revealed the effect of post-graduate year on the Teaching Wait Time.

Results
Timings for all pairs of verbal Instructions/Clarifications were averaged into “Instructional Exchange Time.” Timings for all pairs containing an Affirmation were averaged as “Affirmation Time.” One-way ANOVA showed that PGY was unrelated to “Instructional Exchange Time” and “Affirmation Time.” PGY was also unrelated to the total number of Instructions, Affirmations, and Clarifications. However, a paired t-test showed that with higher GOALS scores, “Instructional Exchange Time” was longer (p=0.05), suggesting participants with more skill received, and possibly required, less closely timed coaching. GOALS was related to time in between Affirmations and Clarifications (p=0.003), suggesting that less skilled learners received encouragement and tips close together in time. Frequencies of Instructions (p=0.02), Affirmations (p=0.008), and Clarifications (p=0.02) were higher for participants with lower GOALS scores suggesting less skilled learners required more guidance overall.

Conclusions
Wait time variables successfully correlated with skills assessment scores, but not PGY.

Significance
Brief coaching sessions may provide assessment data similar to longer, more involved intraoperative assessments. Wait times may detect someone having trouble learning while being coached. No funding support.
THE "60 SECOND QUERY": A WAY TO ASSESS KNOWLEDGE IN PRACTICE?

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Introduction
Educators are often concerned about whether learners accurately apply what they know in practice. The ability to recognize quality and safety risks in the healthcare environment is one example of this. Learners may know about the kinds of risks and events that can occur, but risks and events cannot be addressed if learners do not recognize them as they happen. The goal of this study was to test a method for assessing surgery residents’ ability to recognize quality and safety issues encountered in their workday.

Hypothesis
We predicted that over 4 sessions participants would mention at least one new category of safety and quality risks or events.

Method
This longitudinal, mixed methods study was carried out during a quality and safety course led by author JHM in October and November 2019 and February and May 2020. At the beginning of each session, 20 UPSoM Department of Surgery residents completed an anonymous, online “60 second query” to list “examples of a quality and/or safety issue” that they had physically witnessed. The rationale was that the more details and types of quality and safety issues that a participant could describe, the more knowledge they had for recognizing them. The query was limited to 60 seconds to encourage participants to recall and not over-analyze.

Results
A coding scheme was developed from participants’ responses using the constant comparison method of iteratively discussing and categorizing data until data saturation is reached. The categories of risks and events were: Communication, Medication Errors, Incomplete Care, Delay in Care, MD Error, Nursing, OR Staffing, OR Process, and OR Technical Issues. Inter-rater reliability reached 80 percent agreement, and any remaining coding disagreements were resolved. Analysis revealed that over the sessions, all participants were able to detail at least 1 quality or safety risk in a new category that they had not mentioned before. No statistical test was necessary.

Conclusion
The “60 second query” could provide unique information about learners’ knowledge about quality and safety. The finding that participants mentioned new categories of risks and events over time suggests that the method might also detect changes in knowledge.

Significance
This method could complement knowledge tests in other areas besides quality and safety and post graduate learners. Because the goal is fast recall of experiences, it gives a quick “snapshot” of the knowledge that the learner is relying on in the healthcare environment.

No sources of support.
Impact of a Resident Only Rounding Team in the NICU

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Background: Pediatric residents currently spend fewer weeks in the Neonatal Intensive Care Unit (NICU) than in the past. Whereas previous trainees learned neonatal care over many months, at UPMC Children's Hospital, they currently complete only two months in the NICU. Concurrently, clinical advances have decreased the need for invasive procedures, reducing the number residents complete prior to graduation. Educational opportunities have also been diluted by a surge in non-physician providers (NPPs). An informal needs assessment of academic neonatologists demonstrated that while attendings believe residents are capable of caring for ill neonates, only 30% preferred to work with them, and a mere 5% felt resident care was equivalent to NPPs. In our residency, lack of exposure has resulted in decreased resident directed education and clinical experience, setting up a cycle of mistrust in allowing residents to care for ill neonates. Ultimate outcomes of this are reflected in the resident satisfaction in their NICU rotations.

Objective: To determine if a resident-only rounding team increases educational satisfaction in the NICU, improves resident knowledge, increases the number of procedures completed by residents, and improves patient quality outcome measures.

Methods: A resident-only rounding team was recently established in the UPMC Magee-Womens Hospital, a 65 bed level III academic NICU. Along with this change in team structure, several curricular interventions were implemented: the lecture series was updated and expanded, procedure and lecture checklists were developed, and a week of NICU "boot camp" was instituted. The pool of attendings assigned to Yellow team was also restricted to provide continuity. The curricular changes will be measured through resident rotation evaluations, procedure logs, ITE scores, and chart reviews to quantify patient outcomes. Chi-square tests will be used to compare discrete characteristics and Wilcoxon tests will be used to compare continuous characteristics. Qualitative analysis will be performed on the comment section from rotation evaluations.

Results: The first measured end-point of the intervention concluded at the end of June 2020. Statistical analysis of all resident satisfaction, educational, and patient metrics are pending and expected prior to presentation. Informal review of resident evaluation and procedure log data shows a trend toward improved satisfaction with the educational environment of the NICU and increased procedural attempts. Colloquial feedback has been positive, with the improvement recognized by the residency program leadership.

Implications: A resident only rounding team in the NICU has received positive feedback at all levels in the pediatric residency program without apparent detrimental effects on patient care. Should increases in procedural attempts be statistically significant, this has national implications as a hot topic in medical education.
A multimedia telemedicine curriculum for pediatric residents

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Background: In response to the COVID-19 pandemic, healthcare providers have expanded telemedicine capabilities. However, many providers report discomfort in providing care via telemedicine and there are few telemedicine educational programs for trainees. In an initial needs assessment, UPMC pediatric residents reported low confidence levels in conducting a telemedicine visit. Our aim was to create and implement a curriculum to educate pediatric residents in telemedicine in the primary care setting.

Hypothesis: We hypothesized that a multimedia introductory telemedicine curriculum for pediatric residents would improve their perceived ability to conduct an effective telemedicine well-child check.

Methods: The curriculum was delivered through a combination of media. Residents received an hour-long didactic orientation with corresponding instructional packet, participated in a shadowing session with an attending physician, and then conducted two-year-old and school-age well-child visits via telemedicine. This was supported by age-specific visit outlines, digital note templates, and close supervision from attending physicians.

Residents were surveyed on their experience using a five-point Likert scale to rate their confidence level with various components of the telemedicine experience (1 = not at all confident; 5 = very confident) and how each component of the curriculum affected their perceived ability to provide well-child care through telemedicine (1 = significantly decreased; 5 = significantly increased).

Results: Of the 96 residents who received training, 46% responded to the survey. The majority of residents surveyed (84%) reported feeling confident (“somewhat confident” or “very confident”) conducting a telemedicine visit; 95% felt confident taking a history and 66% felt confident performing a physical exam. However, only 59% of residents reported feeling confident using the telemedicine platform. The majority of residents also reported that each of the educational media either “strongly increased or somewhat increased” their ability to perform well-child care through telemedicine with 95% reporting the digital template increased their ability, 84% the clinical experience, 78% the instructional packet and 77% the shadowing experience.

Conclusion: This multimedia introduction to telemedicine increased pediatric residents’ perceived ability to perform telemedicine well-child checks. Each educational medium was rated highly, which suggests that a multimodal educational strategy is useful to support different types of learners. Residents reported lowest confidence levels with using the telemedicine interface, so increased focus on the telemedicine platform in the curriculum could be beneficial moving forward. Nevertheless, as the curriculum was implemented over a short period, this model could be useful for rapid clinical education transitions in the future.
A Virtual Patient Module for Teaching Telemetry Monitoring to Pre-clerkship Medical Students

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**Needs/Objectives:** Cardiac telemetry monitoring (CCM), is essential for monitoring heart rate, rhythm, and waveform in hospitalized patients. Accessing and interpreting telemetry data is not typically taught formally, including at University of Pittsburgh School of Medicine (UPSOM), despite its extensive use and convenience in providing immediate data to clinicians. While little data exists on teaching the use of CCM, recent studies show that undergraduate and graduate trainees demonstrate suboptimal interpretation skills and low-level confidence with EKG. This void in knowledge can contribute to adverse patient outcomes. We hypothesize that a brief virtual patient module teaching interpretation of CCM (the curriculum) would improve students’ knowledge and reported use of skills with CCM.

**Setting/Participants:** The curriculum and accompanying survey of knowledge, attitudes, and use of skills were distributed to the Classes of 2021 and 2022 during Pre-clerkship Week in May 2019 and June 2020. The Class of 2020, serving as a historical control, participated in the survey during May 2018 Pre-clerkship week without exposure to the curriculum. To maximize student completion, students were incentivized with a gift card raffle. Students received a maximum of 4 emails encouraging participation.

**Description:** The 30-minute curriculum was created using VPSim software, employing 3 interactive clinical cases with sequential presentation of history, physical exam, lab, and imaging data. Multiple-choice questions with immediate feedback and a tutorial on practical use of CCM were embedded. Both intervention and control groups completed two surveys: a presurvey and a 6-month postsurvey including questions on user demographics, knowledge, and attitudes toward CCM. This curriculum was approved by UPSOM’s Research on Medical Students Review Committee and deemed exempt by the IRB.

**Evaluation:** Participant comfort and knowledge were assessed prior to and 6 months following the module using RedCap. Content knowledge was evaluated using board-style multiple choice questions with embedded telemetry images. Attitudes were measured using a Likert-type scale.

**Discussion:** Preliminary qualitative data suggest that this module was effective in improving students’ knowledge. The main challenge to implementation was maximizing student participation and follow up survey response rates. This year the curriculum was offered with other official asynchronous virtual Pre-clerkship Week materials in June 2020, and participants will complete a post-survey session in November 2020. Official free time for the module’s completion during Pre-clerkship Week allowed for recruitment of 55 new participants who will provide us with quantitative evaluation of the intervention. This curriculum may fill a void in training programs looking to implement formal teaching of cardiac telemetry.
Resident Comfort in Core Procedural Requirements

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Introduction: ACGME requires graduating pediatric residents to perform essential procedures such as bag-mask ventilation (BMV), neonatal endotracheal intubation, lumbar puncture (LP), incision & drainage (I&D) of abscess, and fracture splinting. Recently there has been an increase in the number of providers who perform these procedures, with more residents and advanced practice providers (APPs), and increased utilization of interventional radiology. Additionally, there has been a dramatic decrease in the number of neonatal intubations performed since 2017 when the NRP recommended against intubation and suctioning for meconium aspiration syndrome.

Hypothesis: We hypothesize that pediatric residents have become less comfortable performing core procedures.

Methods: The number of categorical pediatric trainees from 2011-2017 was obtained from the ABP. The National ACGME Pediatric Resident Survey Data from 2013-2019 were reviewed, including Likert scale resident responses on how well prepared they felt to perform procedures (BMV, neonatal endotracheal intubation, LP, I&D of abscess, and fracture splinting) without supervision.

Results: From 2011-2017, there was a 6% increase in the number of categorical pediatric residents, from 8,774 to 9,396. Resident comfort with performing procedures declined from 2013-2019 for all five procedures. Residents felt more comfortable performing LPs and BMV. There was a 17% decline in comfort with neonatal intubations, with the steepest drop off after 2017.

Conclusions: Pediatric residents are less comfortable performing core procedures. This correlates with an increase in the number of trainees and APPs. Residents felt more comfortable performing higher-acuity procedures, such as LPs and BMV, compared to I&Ds and splinting. The most substantial decline was observed for neonatal intubations, specifically after the change in NRP guidelines, suggesting that resident comfort also decreased due to less procedures being performed.

Significance: Our data suggests a need to alter procedural requirements for pediatric residents or devote more time to practice procedures, through procedure-focused rotations, guided workshops, or simulation.

Research/Grant Support: none
Racism in Medicine: Utilization of a Book Club Model to start the Discussion around Social Justice

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Objectives
Racism is a social construct that permeates every institution within American culture. There is a need to recognize racism within medicine as an educational foundation for medical students on equal ground with anatomy or biochemistry to prepare students for the care of future patients. The objectives of this intervention were to allow pre-clinical medical students to identify the construct of racism in medicine and reflect upon their past, present and future experience of racism in the practice of medicine.

Setting
105 1st year medical students at the University of Pittsburgh School of Medicine participated in a voluntary virtual book club, Medical Apartheid by Harriet Washington over zoom. The book club occurred during the summer between 1st and 2nd year of medical school.

Description
The book club was structured into two sessions, with the first session covering the first 7 chapters and the second session covering the remaining 8 chapters. The format consisted of a brief didactic large group session to set ground rules and introduction, followed by an extended facilitated discussion in breakout rooms (15 students and 2 facilitators) and a concluding recap in the large group with brief presentations by small group representatives of key take away points. The discussion within breakout rooms was facilitated by content experts in racism within the University of Pittsburgh community as well as a co-facilitator who assisted in management of chat and tech concerns. The facilitators utilized a discussion guide that required students to connect with the text and reflect into constructs of racism in their experiences.

Evaluation
The book club was evaluated using University of Pittsburgh Qualtrics survey with both qualitative feedback in Likert-scale format and open narrative.

Discussion
The two major themes that students identified were the vital role of a historical perspective on racism in the practice of medicine and the need for this to be a mandatory curriculum experience for all students early in their medical education. The future goal will be to incorporate the book club, Medical Apartheid by Harriet Washington, as a mandatory component of a thread of anti-racism curriculum within pre-clinical medical school education that extends through clinical years. As well, the narrative feedback was informative but more importantly allowed students to process the experience. A brief reflection paper will be an added component to this experience in the future.
Yes! You Should Do YouTube in a Flipped Classroom on a Cardiology Rotation!

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Background: The flipped classroom format has increased in use in the graduate medical education space, particularly in Internal Medicine residencies (Allenbaugh et al. 2019). While it is often cited as a format that is well-received by learners, there continues to be varied outcomes in the efficacy of this format (Riddell et al. 2017). There are numerous high-quality medical education videos easily accessible on YouTube that could be helpful resources for the flipped classroom format. To date, there have not been any studies describing a curriculum that utilizes YouTube in the flipped classroom format and measures its effect on knowledge. The purpose of this study is to examine the effects of a flipped classroom format that uses curated YouTube videos as the primary resource for cardiac content.

Hypothesis: We hypothesized that the use of a YouTube curriculum would improve medical knowledge and self-perceived preparedness in cardiology.

Methods: Sixty-four internal medicine residents who rotated on the inpatient cardiology service from October 2019 to May 2020 were randomized into control and intervention groups. Both groups received usual education; the intervention group also received additional curriculum containing “YouTube” assignments. The intervention group was then asked to "teach back" a learning point from the YouTube video to the cardiology fellow or attending that week. Pre- and post-rotation surveys were used to evaluate medical knowledge with 8 cardiology specific questions from MKSAP and self-perceive preparedness using a Likert scale 1-5.

Results: 43 of 64 participants completed pre/post matched surveys (overall response rate 67%). This included 22 of 32 residents (69%) in the control group and 21 of 32 residents (66%) in the intervention group.

There was a statistically significant difference in medical knowledge improvement between the control and intervention group (% change: 5% vs 13%, p-value= 0.01). There was no difference in improvement in preparedness between the two groups (Likert score change: 0.53 vs. 0.54, p-value = 0.96).

Conclusions: Using YouTube videos as the primary resource for a flipped classroom curriculum on an inpatient cardiology rotation did improve medical knowledge when compared to usual education but did not improve residents’ self-perceived preparedness. Internal medicine residents preferred the flipped classroom format with the use of curated YouTube videos when compared to usual teaching.
Establishing Competencies for Leadership Development for Internal Medicine Residents
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Introduction: Physicians lead complex, multidisciplinary teams, yet often lack formal leadership training. Given current challenges facing healthcare, the development of effective physicians is paramount. The ACGME has emphasized that leadership skills related to competencies of communication, systems-based practice, and professionalism should be included in GME training. However, it remains unclear which skills are most important for early-career physicians.

Hypothesis: We hypothesize that expert consensus generated from this Delphi study will create a prioritized list of leadership skills to guide curricular development for internal medicine (IM) residents.

Methods: We developed and implemented a 2-round Delphi study. Participants were IM physicians in leadership roles with experience in medical education and/or leadership programming within professional societies. Authors developed a preliminary list of leadership skills through review of published literature regarding competencies for healthcare professionals. We used an established framework to group skills by 3 leadership domains: emotional intelligence (EI), cognitive, and character. A priori rules for consensus were established. Participants ranked 31 leadership skills on importance (1=not important, 5=essential) for categorical IM residents, with the goal of competency by the second half of residency and mastery during the first 3-5 years of career. Respondents also commented on number of content hours and curricular format recommended to teach each skill.

Results: Sixteen respondents completed the first round of ranking and 14 completed the second round (response rate 88%). Most were female (71%), in clinical practice for >15 years (64%), full (57%) or associate (36%) professors, held a variety of high-level university and hospital leadership roles, and represented all regions of the US. Thirteen skills were ranked as essential and 9 as very important. Domains of character and EI were equally represented in the consensus list despite being disproportionately underweighted on initial survey. Experts generally recommended between 2-5 content hours per topic. Most frequently recommended modes for content delivery included mentorship/coaching, work-based reflection, and interactive discussion.

Conclusions: Expert consensus identified 13 essential leadership skills for IM residents. While most published curricula focus on cognitive, skills-based leadership competencies, our work suggests that resident initiatives should include a strong focus on character building and EI. Most recommended delivery methods were not didactics, but rather direct observation and debrief through coaching/reflection. This suggests that curricular time and space, a commonly cited barrier in GME, may not exist for this content area.

Significance: These findings highlight the importance of developing targeted leadership skills development programs for IM residents, and lend insight into optimal curricular methods to provide this education.

Funding: Division of Division Internal Medicine
Remote assessment and coaching of Fundamentals of Laparoscopic Skills (FLS)
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Needs and objectives: COVID-19 has altered the landscape of traditional simulation skills coaching. Traditionally, assessment and skills coaching are performed for PGY-3 Ob/Gyn residents at UPMC Magee-Womens Hospital in preparation for their FLS exams. Due to the limitations and uncertainty surrounding the ability to continue this traditional face-to-face teaching modality due to the COVID-19 pandemic, assessment and skills coaching for Fundamentals of Laparoscopic Skills (FLS) was transferred to a live streaming platform.

Settings and participants: Ten PGY-3 Ob/Gyn Residents participated in remote assessment and, if applicable, remotely proctored coaching sessions of Fundamentals of Laparoscopic Skills (FLS).

Description: During the initial session, all learners complete the 5 FLS manual skills while being recorded on an internet streaming platform. Two expert minimally invasive gynecology surgeons scored the baseline sessions to identify areas of competency and deficits. If needed, learners then continued with weekly to bi-weekly remote coaching sessions until competency was reached as mutually assessed by learner and coach. All learners then completed a final streamed session of all 5 FLS skills approximately 2 weeks prior to their FLS exam.

Evaluation: All sessions are recorded through the internet streaming platform. Learners’ baseline videos were reviewed and scored to identify deficits to address in coaching sessions. Learners’ final videos were also scored. In addition, learners will complete surveys for feedback on this teaching modality both after their final session and after their FLS exam. FLS exam performance will also be used as an objective measure of non-inferiority of this teaching platform as compared to the traditional 1:1 face-to-face sessions with learner and coach in the simulation lab leading up to their final local assessment and subsequent FLS exams.

Discussion/reflection/lessons learned: To date, remote assessment and coaching of FLS appears to be a viable alternative to traditional “live” coaching. Early sessions involved brief learning curve to adapt to using the technology. Final analysis of all data will occur September 2020 following the FLS exam. The remote learning platform allowed greater flexibility for learners and coach to schedule and reschedule brief coaching sessions. Due to its virtual nature, remote coaching of FLS is an educational modality that can be extended to sites without surgical coaches readily available. We plan to continue to offer this modality to future classes of residents in preparation for their FLS exams.

Support: N/A
A PAUSE FOR REFLECTION: CHARACTERIZING THE BASELINE FOR REFLECTION AND METACOGNITION AMONG SURGICAL RESIDENTS

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\textbf{Background:} Surgical residency programs are challenged to find efficient methods of improving resident clinical competency. Directed reflection, a descriptive, analytical, and critical reasoning process, has been explored to enhance experiential learning and enrich clinical development. Within surgery, journal writing, self-evaluation assignments, and protected reflective time have been explored. Despite integration of these activities into training, no study has formally reported on the prevalence or types of operative reflection practices among surgical residents. Furthermore, the practice of reflection, to our knowledge, has not been explored by PGY level.

\textbf{Hypothesis:} Surgical residents reflect independently of any curriculum and the practice of reflection evolves based on PGY level.

\textbf{Methods:} An electronically-distributed survey was developed to assess the current state of operative reflection among GS residents at an academic institution. Survey respondents were then divided into junior (PGY 1-3) and senior (PGY 4-5) resident groups for analysis.

\textbf{Results:} A response rate of 46\% (23/50) was attained, including partial responses. All participants reported reflecting on at least 1 operative case. The most common frequency of reflection was everyday (42\%), followed by case-by-case (26\%), 3-4 times per week (21\%) and 5-6 times per week (11\%). The most common timing of this reflection was immediately after the case (79\%), although residents cited this reflection was not routine. When residents do reflect, they spend the most time on weaknesses (48\%), self-improvement (33\%) and judgement (19\%). Methods of reflection were divided to include oral, mental and written reflection. The majority of residents performed mental reflection (86\%) as the most common type. In recalling information from prior reflections, 56\% reported recall was based on mental rumination, as opposed to reading/writing notes (24\%) or peer conversations (14\%). When analyzed by PGY level, the most common topic of reflection for JR was weaknesses (67\%), while SR most commonly focused on self-improvement (42\%). Senior residents were more likely to reflect daily and to perform this reflection in the operating room. The primary method of reflection for both JR and SR was mental reflection (88\% vs 66\%). No JR reported the practice of oral reflection (discussions with attendings, peers and non-medical family/friends), whereas 17\% of SR performed this method. In regards to recall, 11\% of JR reported not recalling events from a prior reflection.

\textbf{Conclusions:} At baseline, surgical residents reflect independently as part of their surgical training using a combination of mental, written, or oral reflection exercises. A majority of residents primarily reflect mentally. Differences in reflection among JR and SR were seen regarding topic, timing and recall. Further investigation into the value and process of reflection during residency, and its impact on advancement and competency, is needed.
**MyScope: a creative exploration of imposter syndrome at Pitt Med**

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**Needs and objectives:** Imposter syndrome (IS) is the ubiquitous phenomenon of feeling doubt in one’s own ability despite objective evidence to the contrary. These unrelenting feelings of diminished self-worth are endemic amongst medical students and persist into graduate medical education and beyond. If left unaddressed, IS is linked to psychologic distress and subsequent burnout. However, guidance on how to mitigate IS feelings is not routinely addressed within medical curricula. The MyScope project, a creative exploration of IS combining photographic and written media, aims to 1) explore medical students’ experiences with IS, and 2) make explicit the ubiquity of IS.

**Setting and participants:** Twenty University of Pittsburgh medical students (18 MS1s, 2 MSs, 65% female) were independently interviewed in fall 2019 regarding their journeys with IS. Participation was voluntary.

**Description:** MyScope was designed to externally expose internal thoughts regarding IS. Interviewees were asked 3 questions to prompt reflection on their thoughts about becoming successful physicians: 1) In your opinion, what are qualities in good physicians that you admire, 2) What intrinsic qualities can you identify in yourself that will make you a good physician one day, and 3) What is your personal relationship with IS. In addition, with the goal of using art therapy to explore IS-related feelings, authors took candid photographs of the interviewees during the interview process. Creative interventions can promote medical student well-being, and de-stigmatizing IS through art may be a crucial part of that initiative.

**Evaluation:** Authors identified trends in medical students’ relationships with IS using qualitative analysis of student interviews. Voice recordings were de-identified, transcribed verbatim, and analyzed by two reviewers to reduce individual bias. Thematic analysis identified three main topics within the interviews: 1) common positive and negative student self-perceptions, 2) triggers for IS, and 3) students' coping strategies for feelings of self-doubt. Findings were presented to a community audience as an art installation at the BFG café.

**Discussion/reflection/lessons learned:** The stories collected through the MyScope project are poignant and thought provoking. More importantly, though the experiences described were unique, nearly every student identified feelings of imperfection and self-doubt. This corroborates prior work on IS within medical education and lends further evidence that IS is a ubiquitous issue demanding a creative and immediate solution. Students responded positively to the interview process, raising the possibility that innovative art projects might serve a second purpose – to provide a platform for students to speak openly about their experiences, to normalize and de-stigmatize IS, and to encourage a community of peer-mentorship and support.

**Support:** Pitt Med Wellness Committee, Dr. Joan Harvey, Dr. Ann Thompson, Susan Wagner, BFG café
DESIGN AND IMPLEMENTATION OF A FLEXIBLE PEDIATRI SCIENTIST DEVELOPMENT TRACK

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**Needs and objectives:** Curricula for pediatric scientist development program in pediatric residency and fellowship are not standardized, despite a national shortage of pediatric physician scientists. We developed an integrated residency/fellowship pediatric scientist training program in our program to promote success in research-focused careers.

**Setting and participants:** There is no clear consensus for curriculum design in scientist training during residency. We developed an integrated six-year program offering non-standard American Board of Pediatrics pathways, adapted from previously published models. Guided by a steering committee comprised of departmental leadership and our Chair, we were able obtain approval for acceptance into fellowship programs at time of residency selection to overcome a key obstacle. We also developed internal educational activities to support scientist development, including career development training.

**Description:** The Pediatric Scientist Development Program (PedSDP) is an integrated, 6-year residency/fellowship training program which provides alternate curricula to enhance research time and leadership skills. Our mission is to develop pediatrician-scientists through an individualized six-year program that combines residency and fellowship. Our trainees embody excellence in care, inquiry, and leadership.

Identification of candidates during recruitment, early mentoring committee formation, and support for research time combine to promote scientist development.

**Evaluation:** In six years, the PedSDP has recruited 15 residents into our program, improving our overall MD PhD recruitment to 3 per year in residency. Nine PedSDP trainees are MD PhDs, while six are MDs (a specific focus of our program). Residents have pursued fellowship in Infectious Disease and Allergy/Immunology (2 each), Neonatology, Rheumatology, Critical Care Medicine and Cardiology (1 each).

Independent award rates in fellowship are higher for our program participants (75%) than the overall Department (10%). Scholarship is increased in our program participants when compared to categorical residents (average 1 peer reviewed publication per year compared to 0.2 for categorical residents).

**Lessons learned:** We have successfully implemented a training program which has increased both MD PhD recruitment to CHP but also has provided opportunity for MD residents. We have found new strategies for recruitment (a dedicated ERAS track) but continue to struggle to identify and attract MD/DO only resident applicants interested in being physician-scientists to the program.

**URL** [http://www.chp.edu/health-care-professionals/education/residencies/pedsdp](http://www.chp.edu/health-care-professionals/education/residencies/pedsdp)

**Support:** Department of Pediatrics, Burroughs Wellcome Fund (University of Pittsburgh Burroughs Wellcome Physician Scientist Incubator)
The Student Dermatology Clinic for the Underserved: A service-learning model for dermatology residents and medical students in Southwestern Pennsylvania

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Needs and objectives:
Patients who are uninsured and underserved face barriers to accessing dermatologic care, including longer wait times and higher rejection rates. Free clinics function as an instrumental resource in marginalized communities by helping to bridge the health care gap of access to care. The Student Dermatology Clinic for the Underserved (SDU) is a free dermatology clinic for patients at Squirrel Hill Health Center (SHHC). Herein, we describe and evaluate the SDU clinic as a sustainable service-learning model to increase outreach and offer culturally rich and medically challenging learning experiences for trainees and medical students.

Setting and participants:
SDU functions as a partnership between dermatology residents and attending physicians from the University of Pittsburgh Medical Center (UPMC) Department of Dermatology, medical students from the University of Pittsburgh School of Medicine Dermatology Interest Group Association (DIGA), and the SHHC, a federally funded community health center.

Description:
At the quarterly SDU clinic, an average of 10 patients, who are referred by their health care provider, are seen at each clinic session. DIGA medical students coordinate student volunteers and patient scheduling, while dermatology residents coordinate resident participation. The UPMC Department of Dermatology provides all necessary supplies, including biopsy kits, and biopsies are read by the UPMC Dermatopathology Unit at no cost. Medical student and resident teams evaluate the patients, then present to the dermatology attending, and devise patient care plans with patient education. To ensure follow-up care is arranged, UPMC dermatology providers communicate directly with SHHC providers.

Evaluation:
In a survey of residents who voluntarily participated in SDU, 88% (n=8) report that their involvement with SDU increased their awareness of health disparities and social factors impacting dermatologic care and 88% report that their involvement encouraged them to be more involved in community service throughout their career. Since the SDU clinic occurs on Tuesday evenings, scheduling conflicts may limit patient participation. With the cultural and ethnic diversity of the patient population, telephonic and video translation services are used to communicate with non-English speakers. Overall, there have been no safety issues.

Discussion/reflection/lessons learned:
We have identified SDU as an effective service-learning model that facilitates vertical learning and interprofessional collaboration. Partnering with a local community health center allows for patient-centered, longitudinal care, while reducing barriers to access in underserved populations. In this service-learning model for dermatology residency training programs, we not only address the dermatologic needs of an underserved population, but we also create a rewarding training environment that encourages medical students and residents to volunteer at the free clinic, thereby fostering interest in health disparities, increasing skin health equity and cultural sensitivity.
Development of a General Pediatrics “Boot Camp” Curriculum within Advanced Practice Provider Sub-specialty Fellowship Training

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Needs and Objectives -
The shift towards value-based practice has left healthcare exploring new models of care with a focus on maintaining high quality in a cost-controlled manner. This identified a crucial need to enhance Advanced Practice Provider (APP) utilization. In response, our institution was among the first to establish pediatric APP Fellowship training programs. Unique to our institution was a General Pediatrics “Boot Camp”, placed at the core of each subspecialty’s fellowship program. The Boot Camp curriculum aims for our APPs to

• gain exposure to common pediatric diagnoses and patient populations
• gain exposure to hospital-wide infrastructure
• recognize and triage commonly encountered pediatric emergencies
• build a multidisciplinary community

Setting and Participants -
All APPs hired into the Department of Pediatrics at UPMC Children’s Hospital of Pittsburgh must complete the APP Fellowship training program within their specialty. APPs with significant experience in the field, as defined by ≥ 3 years within their hired subspecialty, were not required to complete but would be offered the opportunity to participate. Each APP Fellow was enrolled in the 4-week Boot Camp within the first quarter of their hire. Between October 2018 and July 2020, 33 fellows have completed the program.

Description -
The four-week curriculum delivers a training experience that includes Pediatric Advanced Life Support, simulation training for acute clinical scenarios, and didactic lectures on core pediatric topics. Additionally, fellows have 3 weeks of clinical observerships in specialties outside of their fellowship track but where their patients are likely to experience care.

APP fellows were asked to complete a pre-Boot Camp needs assessment which was later compared to a similar survey following completion of the curriculum. They also completed a pre-Boot Camp knowledge assessment followed by weekly quizzes compromised of the preceding week’s didactic content. If a fellow received a weekly quiz score below 80%, a remediation protocol was triggered. Finally, fellows were asked to complete lecture evaluations following each didactic session so the content could be revised as needed.

Evaluation -
After completion of Boot Camp, fellows report feeling more connected to other APPs, as well as other providers. Furthermore, there was a significant increase in the percentage of fellows who report feeling comfortable identifying pediatric emergencies and initiating management across all three provided clinical scenarios.

Discussion/Reflection/Lessons learned -
Advanced Practice Providers who complete this structured onboarding and training experience benefit by accelerating their general pediatric knowledge, improving their clinical confidence, and more rapidly integrating into the institutional community.
Effect of a Hands-on Pre-Clinical Neurosurgery Elective Course on Second-Year Medical Student Interest and Attitudes

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INTRODUCTION: Medical student involvement opportunities and educational experiences with surgical residents during medical school have been shown to increase the chance of students deciding to specialize in surgical specialties.

OBJECTIVE: Determine the effect of a mini-elective course during the second preclinical year on student interest and opinion of neurosurgery.

METHODS: From 2017 to 2019, thirty-nine students completed opinion-based surveys and factual knowledge quizzes during a neurosurgical elective course over three iterations, which included lecture and skills lab instruction. Pre- and post-course surveys measured interest in neurological surgery. Weekly pre- and post- lecture quizzes assessed practical knowledge of neurosurgical topics.

RESULTS: Post-course, students reported a significantly increased mean understanding of neurosurgery on the Likert scale (6.1 ± 1.7; p = 0.001). A higher percentage of students rated neurosurgery highly as a career possibility (≥ 8/10 interest level) post-course. Knowledge based-content assessment revealed a significant increase in overall correct answers after lectures (mean_pre=3.85, mean_post=5.05, p = 0.001). Compared to the first year without female instructor representation, there was a significant increase in perception of welcoming women in neurosurgery during the second and third years which incorporated female representation (no female instructors mean_pre=5.6, mean_post=5.6; female instructors mean_pre=6.20, mean_post=7.6, p= 0.01). There was also an increase in female enrollment (31% versus 56%).

CONCLUSIONS: Early exposure to subspecialties may assist in making important career decisions. Similar preclinical courses may benefit other surgical subspecialties and serve as standardized platforms for recruitment and development of teaching skills among residents.
Improved publication rate by fellows after implementation of a comprehensive research curriculum for pediatric emergency medicine

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Background

Pediatric subspecialty fellows are required to complete a scholarly product during training, but many never publish this work. Factors reported to be impediments include unfamiliarity with applying scientific research methods, lack of training in statistical analysis, and inexperience with the manuscript publication process. Additionally, an absence of timeline markers and specific guidelines related to research progress contributed to delays in timely completion and ultimate publication of scholarly work. The objective of our project was to design and implement an oversight program to optimize the opportunity for pediatric emergency fellows to publish their scholarly work prior to graduation. A short-term goal was to assure publication of their work within three years of graduation from fellowship.

Hypothesis

Implementation of a comprehensive research curriculum will increase the research expertise and productivity of pediatric emergency medicine fellows as measured by publication of scholarly work within three years of graduation.

Methods

This study was conducted at a tertiary children’s hospital affiliated with an academic university, enrolling 3 fellows each year in its pediatric emergency medicine program. A scholarly oversight committee (SOC) was instituted at our program in 2007 to oversee the scholarly activities of the fellows. In 2011, we implemented a research curriculum to equip fellows with the tools for conducting and publishing research. To assess research productivity, we compared publication rate of our fellows between 2004 and 2011 (before implementation of the curriculum) and between 2012 and 2016 (after implementation). During the study period, 38 trainees completed the fellowship program.

Results

The didactic component of the research curriculum was structured as follows: a) monthly lectures in research design, statistical methods, navigating the Institutional Review Board (IRB), abstract writing, and poster design b) interactive workshops for Medline search, Endnote tutorial, and statistical analysis, and c) manuscript writing sessions. Oversight was provided via a) quarterly SOC meetings for each fellow, b) creation of a research project timeline with specific bi-annual goals, and c) assignment of a research coach for every research month. Publication rate increased from 29.7% (SD 14%) prior to implementation of the SOC curriculum compared with 91.5% (SD 17%) after implementation (p = 0.006, Mann Whitney U test).

Conclusions/Significance

Implementation of a comprehensive research curriculum significantly increased the rate of publication of scholarly work by fellows in a pediatric emergency medicine training program. The structure and elements of the SOC and research curriculum may be replicated for fellows in other subspecialty programs.
Race and Racism in Medicine: The Development of an Anti-Racist Curriculum for Medical Students

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Needs and objectives

As of 2010, average life expectancy for white Americans was 3.8 years longer than for Black Americans. Rates of infant mortality and deaths from heart disease, diabetes, cancer, and homicide were all significantly higher among Black people. Racial disparities in health are accompanied by disparities in access and processes of care. For example, Black Americans have decreased access to mental health services, and are less likely to have their pain controlled adequately. The roots of such disparities are inextricably linked to our nation’s history. From the earliest days of slavery in America, leaders in American medicine and society—from prominent physicians to founding fathers—have used pseudoscience around race to justify discriminatory systems and practices, a shameful legacy that impacts medical education today. A 2016 study of medical student and trainee attitudes regarding biological differences between the races found that, among second year medical students, 14% believed “Blacks’ nerve endings are less sensitive than whites,” and 42% endorsed the notion that “Blacks’ skin is thicker than whites.” Whereas increased representation of Black Americans in medicine is crucial for addressing racist beliefs and eliminating health disparities, academic medicine seems to be moving in the wrong direction. The number of Black men entering medical school in 2014 was lower than in 1978. We devised the “Race and Racism in Medicine” course as an anti-racist curriculum to expose the historical, cultural, and political roots of racism in medicine, to define the causes and impacts of racial health disparities, and to empower the next generation of physician leaders to practice anti-racism through clinical medicine, research, and advocacy.

Setting and participants

The course is a classroom-based elective featuring lectures, facilitated discussion, flipped-classroom presentations, and structured reflection. It is offered as an elective to 3rd and 4th year medical students.

Description

Drawing on principles of critical race theory and the psychology of behavior change, the 4-week course consisting of 2 classroom hours 5 days per week will follow a distinct narrative arc. The first week will cover the history of racist ideas and their relationship to the history of systemic racism in America. Week 2 will address contemporary manifestations of structural racism in society in medicine. Week 3 will investigate the roots and consequences of health disparities, and week 4 will introduce tools for addressing disparities through science and advocacy. Throughout the course, students will research and present on key figures and events. Selected readings including fiction, non-fiction, and poetry will complement lecture topics. At the end of each class, students will reflect in a journal and at the end of each week, students and faculty will participate in a facilitated dialogue around their journal entries.

Evaluation

Students will be assessed on discussion, reflection, and synthesis of course material.
Pediatric Fellowship Training During the COVID-19 Pandemic: A Survey of Program Directors

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Needs & Objectives: The COVID-19 pandemic led to a variety of changes to traditional medical education. Fellowship directors (FD) face unique challenges in reconciling the need for continued high-quality education for fellows with the increased risk of COVID-19 infection from direct patient care. This study investigated the changes made to pediatric fellow education and clinical responsibilities in the era of COVID-19.

Setting & Participants: As part of a larger, anonymous, web-based survey of pediatric faculty and trainees, we recruited both medical and surgical pediatric FDs at a tertiary-care pediatric hospital from April 16 to April 23, 2020.

Description: The portions of the survey related to fellowship training consisted of 9 mixed-format survey questions exploring changes in clinical responsibilities, use of telemedicine, and research experiences during the pandemic. We used descriptive statistics to analyze results.

Evaluation: Among 22 respondents, 86% stated that fellows participated in outpatient telemedicine visits. The format of these visits varied; in approximately one-third (35%), both the fellow and attending were present during the entire visit, but on separate computers. The fellow conducted the entire visit independently and called the attending afterwards to discuss management plans in 25% of cases. More than two-thirds (77%) of FD respondents reported a reduced number of on-site fellows seeing patients in the hospital. When asked about inpatient rounds, almost half (42%) of FDs reported that fellows rounded with the attending but did not physically see patients themselves. Seventy-nine percent of FDs with fellows performing bench research stated that fellows are no longer physically entering the lab and are instead working from home, and 24% of FDs with fellows performing clinical research stated that these projects have been put on hold due to institutional restrictions. Regarding the role of trainees (including residents and fellows), 41% of FDs felt it was very or extremely important for trainees to provide direct patient care and 73% indirect care during the pandemic. Eighty-two percent of FDs felt trainees to be “essential personnel”.

Discussion: Pediatric fellowship directors have adapted to the COVID-19 pandemic in a variety of ways. Further studies are needed to define the impact of these changes on fellow educational experiences and patient outcomes. As the COVID-19 pandemic continues, the trial of innovative methods to provide high-quality educational opportunities for fellows will remain paramount.
Inpatient Perioperative Medication Management: A Curriculum for Internal Medicine Residents

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Introduction
Inappropriate medication management prior to surgery can lead to significant patient harm. Poorly managed medical conditions are a leading cause of surgical readmissions. Perioperative Medicine, focused on this high-risk time, is a required competency of both the ACGME and ABIM. Despite this, implementation of curricula across training institutions is variable, and assessment of curricular impact is lacking. Further, a survey of recent residency graduates indicated a lack of emphasis on the topic during their training.

Hypothesis:
We hypothesized that implementation of a perioperative medication management curriculum would improve knowledge for internal medicine residents.

Methods
Curriculum: The curriculum was delivered to internal medicine residents during their junior hospitalist and medicine consult rotations. Content was delivered during one-hour sessions occurring weekly for four consecutive weeks and repeated with each rotation. Topics included antihypertensives, antihyperglycemics, and antihemostatics. Participants completed the pre-survey at the beginning of the first session and the post-survey during the final session. Delayed-post-surveys will be sent to residents 6 months after completion of the curriculum.

Assessment:
Curriculum impact was assessed with an electronic survey using REDCap. Resident knowledge was assessed with 10 multiple choice style questions and 2 free response questions designed to replicate writing progress notes. Local content experts provided input on question development. No validated questions assessing knowledge were available in the literature, so questions were developed and then piloted on members of the section of hospital medicine. Attitudes were assessed with a combination of Likert-style and multiple-choice questions.

Results:
The curriculum was administered beginning in February 2020. Five resident cohorts completed the curriculum at the time of preliminary data analysis in June 2020. 21 residents completed the pre-survey and 17 completed the post-survey. Resident scores on the 10-question multiple choice section improved by 2.6 correct questions (pre-survey: 4.6±1.1, post-survey: 7.3 ± 1.2; p<0.0001). No residents scored lower on the post-survey compared to the pre-survey. Two questions performed worse on the post-test (Q4,Q5), although this difference was not statistically different. 71% of participants reported enjoying the curriculum. Resident-reported satisfaction was high for each session (S1: 5.0 out of 5; S2: 4.9/5; S3: 4.5/5; S4: 4.6/5).

Conclusions/Significance:
Implementation of perioperative medication management curriculum resulted in significant improvement in resident knowledge. Two poorly performing questions likely represent a need for improved question generation. The curriculum was continued during COVID-19, suggesting durability during educational stressors. Further study of the curriculum will examine attitudes of residents as well as durability of knowledge.
Gender Disparities in Job Satisfaction in Academic Plastic Surgery

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Background: The availability of senior academic faculty as mentors and role models for medical students and residents plays a key part in student education and advancement. Plastic surgery has historic disparities in the gender diversity of academic mentors that have minimized student heterogeneity. Few studies in the field of plastic surgery have sought to understand why these disparities occur. Satisfaction given the importance of job satisfaction in practitioner retention, the aim of this study was to evaluate if women in the field of academic plastic surgery experience significant differences in job satisfaction when compared to their male colleagues.

Hypothesis: We hypothesized that women face greater job dissatisfaction due to discrimination and mistreatment from other staff.

Methods: A cross-sectional study was conducted using a 15-question survey sent on November 2017 to evaluate gender disparities in job satisfaction among US academic plastic surgery faculty, residents, and fellows. Surveyed factors included job satisfaction (five items on a seven-point Likert scale ranging from 1-“delighted” to 7-“terrible”), as well as demographic and training data.

Results: A total of 349 responses from 33 different states were obtained. Women reported significantly less satisfaction with their work environment (female=2.69, male=2.35, difference=0.35, p=0.022), and work resources (female=2.53, male=2.19, difference=0.33, p=0.016). On sub-group analysis, gender differences in dissatisfaction with work environment was reported among women in a long-term relationship (female=2.87, male=2.36, difference=0.51, p=0.005), who were attendings (female=3.07, male=2.33, difference=0.74, p=0.005), and who were from the West (female=2.89, male=2.29, difference=0.69, p=0.030). Further gender disparities in job satisfaction were identified on sub-group analysis based on age, race, relationship status, level of training, residency type, academic position, leadership position, and region.

Conclusions: This study demonstrates significant differences in job satisfaction between male and female plastic surgeons, extending to specific aspects of the workplace, and disproportionately affecting certain women. Overall, understanding who these job satisfaction disparities affect and why they occur is an important step towards improving representation and student mentorship in the field.
Trends in Microsurgery Fellowship Training to Pursue an Academic Plastic Surgery Career

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Background:

The microsurgery fellowship has taken on new importance in career development, with many now pursuing fellowship training as a foundation for future academic careers. In an increasingly competitive environment, medical students interested in both plastic surgery and an academic career must be deliberate in the residencies and microsurgery fellowships they choose. The aim of this study was to detail the effectiveness of individual fellowship programs in helping aspiring academics achieve their goal.

Hypothesis:

We hypothesized that a select group of microsurgery fellowship programs are more effective at producing academic plastic surgeons and would overrepresented among academic microsurgeons.

Methods:

We profiled all the currently practicing academic plastic surgeons in the United States during the 2019 year. This produced a database of 930 academics. Demographics, residency and fellowship background, practice interests, and practice type were collected from institutional and practice websites, Doximity, LinkedIn, and Google.

Results:

Of 930 academics, 18.8% were found to be microsurgery fellowship trained. For those academic microsurgeons, 60% were found to have trained at one of the 10 most-represented fellowships. In order of representation, these institutions included: MD Anderson, New York University, Memorial Sloan-Kettering, University of California, Los Angeles, University of Pennsylvania, Chang Gung Memorial Hospital, University of Pittsburgh, Stanford, University of Texas Southwestern, and University of Chicago.

Conclusions:

It appears that there are a select number of fellowship programs that produce a disproportionate number of academic microsurgeons. The reasons for this disparity are likely multifactorial but include improved networking and career-building opportunities. For medical students interested in plastic surgery and future academic practice, this new analysis can help inform program selection and guide the application process.
Scalability of a remote advanced pharmacy practice experience with post graduate year one pharmacy resident preceptors

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1School of Pharmacy

Introduction: Due to suspension of onsite clinical instruction due to the COVID-19 pandemic, a remote acute care rotation was created to provide students with an advanced pharmacy practice experience (APPE) and post graduate year one (PGY1) pharmacy residents with an opportunity to gain experience in precepting roles.

Objective: The objectives were to evaluate student knowledge, clinical skills, communication, student satisfaction, and PGY 1 pharmacy resident acceptance of the rotation and fulfillment of residency precepting objectives.

Methods: A five-week remote acute care APPE rotation was created with pharmacy residents serving as co-preceptors. A written evaluation and intermittent clinical examination (ICE) were deployed at baseline and conclusion to assess student knowledge, clinical skills, and communication. Student surveys assessed perceived skill improvement, satisfaction, and assessment of rotation and resident preceptors. Surveys were also utilized to evaluate resident perceived attainment of precepting objectives and residency program fulfillment of precepting requirements.

Results: Thirty-four students and 10 residents participated in the rotation. Student knowledge and clinical skills increased from baseline (41 out of 60 [31-52] vs 50 [43-55]; p <0.001) and the ICE (36 out of 70 [18-55] vs 59.5 [43-70]; p<0.001). There was a statistically significant increase at rotation conclusion in resident rating of extreme competence or extreme comfort in 45% of domains assessed.

Conclusion: A remote APPE rotation is an effective approach to deliver an APPE rotation and can be successfully used to further student knowledge and provide PGY1 pharmacy residents a precepting opportunity to advance their precepting skills when onsite experiences are limited.
Remote Advanced Pharmacy Practice Experiences: Student learning during a pandemic

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Introduction: As the COVID-19 pandemic has impacted daily operations of healthcare and daily life, the need for remote advanced pharmacy practice experiences (APPE) was created due to the resulting displacement of pharmacy students from their clinical site because of the pandemic.

Objective: This study aimed to evaluate remote APPE rotations regarding student clinical skills, knowledge, communication and satisfaction.

Methods: A four week, remote acute care and institutional rotation was created and deployed for 17 P4 PharmD students. Student patient-centered clinical skill, knowledge base, communication, and confidence was assessed through written evaluation, intermittent clinical examination, and an anonymous survey at baseline as well as upon rotation completion.

Results: Student knowledge and patient care skills increased on the exit assessment as compared to the baseline as demonstrated on the written evaluation (total points possible: 60; Median 40.5 [range 31-51] vs median 38 [29-47]; p <0.001), intermittent clinical evaluation patient presentation (points possible: 70; median 65.25 [range 54-70] vs median 38 [23.5-60.5]; p <0.001) and the SOAP note (points possible: 57; median 35.3 [range 16-42] vs median 31.25 [16.5-38.5]; p <0.001). Of the students that completed the survey, 85% (11/13) believed their communication was proficient at the conclusion as compared to 30% (4/13) at baseline (p=0.0154) and student confidence (score of 1-10 with 10 being completely confident) increased from baseline (median 7.1(5-9) vs 5(1.2-8.4); p<0.001).

Conclusion: A remote rotation can be successfully delivered to provide the acute care core competencies required for an APPE and advance student patient-centered care skills.
CURRICULAR INNOVATIONS IMPLEMENTED IN MEDICAL SCHOOLS TO IMPROVE HEALTH CARE FOR SEXUAL AND GENDER MINORITY INDIVIDUALS

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Introduction: Sexual and gender minority (SGM) patients experience a wide array of health disparities and barriers to inclusive and competent healthcare that heterosexual or gender conforming individuals do not. SGM patients feel more comfortable with their medical providers if they use inclusive language and are competent and knowledgeable about SGM-specific health needs. Currently, medical schools only spend an average of 11 hours during the four-year curriculum educating student physicians about SGM healthcare and do not adequately prepare them to care for this population. This study aimed to assess the current curricular interventions and innovations designed to educate medical students about the healthcare needs of SGM patients.

Hypothesis: This study tested the hypothesis that although medical education has evolved over the past few years, there is still a need for improvements for education about SGM health.

Methods: A rapid review was conducted using guidelines based on the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) methods. The author searched literature databases to acquire articles. Peer-reviewed studies were included if they investigated the current medical school curricular methods in place to educate students about SGM-specific health issues and/or cultural competency skills. Articles were excluded based on established inclusion criteria. Relevant data was extracted and analyzed from the final selection of papers.

Results: Eight articles about sexual and gender minority-specific health curricular innovations were included in the rapid review. Analysis revealed that many schools are using a single one-hour didactic session during pre-clinical training to educate students on the topic while some schools are incorporating SGM healthcare into clinical training, and others are redesigning their curricula to be more inclusive. Topics addressed included SGM health disparities, sexual history taking skills, and transgender healthcare and medicine. All reviewed innovations resulted in positive impacts on students' knowledge, attitudes, and comfort levels with SGM-specific healthcare.

Conclusions: The results indicate that presently there is a lack of structured and standardized SGM-health focused curricula in medical schools. This rapid review revealed that medical schools should incorporate more consistent and longitudinal curricular innovations to ensure that the next generation of physicians is prepared and comfortable with caring for SGM patients.

Significance: By developing culturally competent and skilled physicians in medical school, patients who identify as SGM will feel more confident in their doctors' abilities to provide them with adequate care which will result in better quality and equitable healthcare for this underserved population.

Research/Grant Support: None
A Video- and Case-based Curriculum on the Management of Alcohol Use Disorder for Internal Medicine Residents during Ambulatory Pre-Clinic Conference.

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Needs and objectives
Alcohol use disorder (AUD) is a common but undertreated condition. Providers cite lack of knowledge as one reason why they do not offer treatments for AUD. We developed a case and video-based curriculum for internal medicine (IM) residents to improve knowledge, attitudes, and confidence about mutual support groups, referral to clinical addiction programs, and medications for AUD.

Setting and participants
This curriculum was delivered to IM residents at 4 clinic sites in an academic residency program in Pittsburgh, Pennsylvania. Three 30-minute sessions were delivered during pre-existing curricular time over the course of 3 months by various clinic preceptors.

Description
The curriculum consisted of 3 sessions: psychotherapeutic treatment, pharmacotherapy, and case vignettes. The first 2 sessions began with a 12-minute video followed by case-based content application and the third session was a discussion of case vignettes. Case discussions required application of material taught in prior sessions. The content was developed based on national guidelines and was reviewed by local content experts. The facilitating faculty received a link to the videos and a guide with answers to the discussion questions prior to each session.

Evaluation
We developed a survey to measure knowledge, confidence, and attitudes regarding treatment of AUD. The survey was administered via email to residents pre-curriculum and 1 week after the completion of the 3 month curriculum. Knowledge was measured by mean percent correct of 30 true/false questions. Confidence was measured by mean Likert-scale response on a 7-point scale for 3 items regarding confidence in overall treatment of AUD, psychotherapeutic treatment, and pharmacotherapy. Attitudes were measured by a mean composite score on 12 7-point Likert-scale response items from a modified Survey of Attitudes and Perceptions (SAP) Questionnaire. Knowledge, confidence, and attitudes were compared pre- versus post-curriculum with paired Student’s t-tests.

Of the 153 residents who received the curriculum, 35 (22.9%) completed both pre- and post-surveys and were included in the evaluation. The percent of correct answers to knowledge questions improved from 68.3% pre- to 80.0% post-curriculum (P<0.001). Confidence increased significantly for all 3 items with a particularly notable increase in confidence with pharmacotherapy (2.9 pre- versus 4.5 post-curriculum, P<0.001). Positive attitudes about caring for people with AUD increased from mean SAP score 3.4 pre- to 3.9 post-curriculum (P<0.001).

Discussion/reflection/lessons learned
Overall, a 3-part curriculum delivered by clinic preceptors significantly improved residents’ knowledge, attitudes, and confidence regarding treatment of AUD. This curriculum could be easily disseminated to other residency programs. In the future, we will examine the effect of this curriculum on clinical outcomes such as prescription of pharmacotherapy.
Measuring Self-Efficacy in Investigative Careers in order to Optimize Training

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Needs and objectives - Training programs must provide the foundation for future clinician investigators to prepare successful grants, publications and presentation. Additionally, persistence in this path depends on career satisfaction, perceived efficacy and resiliency in the face of setbacks. Little is known about how to measure training programs’ ability to prepare basic/translational physician scientists to persist and to conduct impactful research. Our long-term goal is to develop a measure of investigative career self-efficacy that can ultimately be used to predict training-based competencies required for academic success and persistence. Proximal goals include cross-sectional characterization of competencies that will inform our training curriculum and that are relevant to trainees at different stages of experience.

Methods, Setting and Participants - We developed a 36 item measure assessing the level of trainee confidence (1-10 scale) on items related both to intrinsic competencies (e.g. productively balancing academic and nonacademic time commitments) and to traditional research competencies (e.g. ability to write a specific aims page). Eight items were drawn from a validated 12-item Clinical Research Assessment Inventory; the other 28 items were drawn from literature on perceived facilitators and barriers for physician scientist success and a needs assessment that we deployed to 192 residents and fellows in academic departments and to alumni of our Physician Scientist Training Program. The measure was piloted with 28 trainees from Pitt’s MSTP, PSTP or BWF Scholar program. We expect to have cross-sectional data from at least 114 trainees by the fall.

Evaluation - Pilot testing of the scale supported the argument for internal consistency (alpha=0.94) and that, on the surface, it performed as expected in different career stages, with higher mean confidence in those further along in their training. We plan to also conduct Confirmatory Factor Analysis to test how well the items measure the factors within the measure. Additional psychometric testing will include test-retest reliability and predictive validity.

Discussion - The process of building and validating this evaluative measure is expected to durably augment and enhance our ability to evaluate both our MST program and other T32 and non-federal programs training physician scientists at our institution. Informative survey competencies will be mapped to learning objectives in our 8-course MSTP enrichment curriculum and 6 course PSTP enrichment curriculum as well as the TL1 and BWF-PSI curriculum (2 courses, 26 workshops). Gaps in pedagogical support of competencies will be identified. In our T32 community at large, there has been little attention to trainee confidence in their own self-efficacy in research-based, transactional and professional tasks. Should this measure link specific items or composite areas to efficacy and performance, it may motivate planning of case-based workshops, classes or coaching centered on building appropriate competencies.

Support - Burroughs Wellcome Foundation
Using Data from the 2018 Pennsylvania LGBT Health Needs Assessment to assess the impact of tobacco and mental health within the LGBT community

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Background: Health disparities existing within the LGBT Pennsylvania (PA) communities such as tobacco use, and mental health concerns have impacted community health. Health status depends on engagement in tobacco cessation and mental health treatment.

Research Questions/Hypotheses: With the focus on LGBT community members, the research questions were

1. What is the level of interest amongst community members towards tobacco cessation and tobacco-free lifestyles?
2. What opportunities are available for community members to engage in tobacco cessation and tobacco-free lifestyles?
3. What are common mental health issues that impact LGBT community members?

Learning Objectives: At the end of the presentation, participants will be able to

1. Discuss the level of interest amongst community members towards tobacco cessation and tobacco-free lifestyles.
2. Describe opportunities available for community members to engage in tobacco cessation and tobacco-free lifestyles.
3. Explain the most common mental health issues impacting LGBT communities.

Methods: A descriptive design over a 7-week period in Spring 2018 was employed using the 2018 Pennsylvania (PA) LGBT Health Needs Assessment data from a survey created by the Pennsylvania (PA) Department of Health and the Bradbury-Sullivan LGBT Community Center. Use of a purposive, convenience, snowball sampling methodology resulted in a total of 4,679 PA LGBT survey participants. Respondents were surveyed on health disparities, healthy living strategies, tobacco usage, and mental health needs.

Results: Ages of respondents in PA widely varied with 48.9% between 25-49 and 19.3% between 50-64. Almost 31% and about 19% of respondents reported current cigarette and e-cigarette use. About 37% of respondents identified as transgender/gender non-conforming and reported tobacco use. About 24.3% of respondents reported interest in quitting smoking within six months using Quitline (2%) and attending a cessation class at a LGBT organization (5%). Other respondents were likely to go to a: smoke free bar/club (60%), smoke-free Pride event (65%), and smoke-free LGBT Community Center (68%).

Approximately 58% of respondents perceived depression as the most impactful mental health issue, 36% reported suicidal ideation and 34% reported loneliness/isolation. Additionally, 78% of respondents reported an experience with a mental health condition and 5% received counseling for the condition.

Conclusions: Some LGBT members are interested in quitting smoking using available smoking cessation strategies and tobacco cessation opportunities are available. Three impactful mental health issues as perceived by LGBT community members were: depression, suicidal ideation, and loneliness/isolation. Overwhelmingly, LGBT members have experienced mental health conditions for which many are being treated.
Use of Ultrasound in Introducing Anatomical Pathology to Pre-Clinical Medical Students, in Correlation with Physical Exam Curricula

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Needs and Objectives
Point of Care Ultrasound has become an important diagnostic tool in many clinical settings. While some medical schools have responded by incorporating instruction on ultrasound into the pre-clinical physical exam curricula for medical students, there is still a knowledge gap in recognizing true anatomical pathology and abnormal exam findings at this early stage in training. This curriculum uses ultrasound as a modality to introduce anatomical pathology to pre-clinical medical students as a means to fill this gap. By the end of the course, learners should be able to better distinguish between normal and pathologic anatomical findings, identify several predetermined pathologies of presented organ systems, and demonstrate how to obtain adequate sonographic images of various anatomical regions.

Setting and Participants
We implemented this ultrasound pathology course as an adjunct to an already established elective course for pre-clinical (first and second year) medical students at the University of Pittsburgh Medical School entitled, “Ultrasound Basics: Correlation with the Physical Exam.” Twelve students completed the course, which consisted of four, approximately 90-minute weekly sessions.

Description
The new curriculum focused on introducing clinical pathology consisted of four, approximately 30-minute lectures designed in a case-based format, given at the end of the scanning portion of the existing course. The four topics of the sessions were: FAST exam and the evaluation of the trauma patient, Cardiac and lung, Abdomen, and Ocular and access. An Emergency Medicine resident created and presented the pathology sessions, and an Emergency Ultrasound Fellowship trained physician reviewed the sessions for content accuracy prior to their incorporation into the course.

Evaluation
Upon completion of the course, the instructors emailed the students an online, seven question survey. Survey results showed positive feedback, with 71% of respondents answering “strongly agree” to the survey question that addressed the primary educational objective, which was to enable students to distinguish between normal and pathologic anatomical findings on ultrasound. Open response feedback highlighted that the course complemented the existing course well and suggested that the course be continued.

Discussion/Reflection/Lessons Learned
A curriculum which presents pathologic anatomical findings on ultrasound can be a useful tool in the education of pre-clinical medical students. Not only does it enable learners to acquire a basic ultrasound skillset at an early stage in training, it also provides timely exposure to pathologic findings which can aide them in better distinguishing between normal and pathologic anatomical findings. Though implemented as an adjunct to an existing course at our institution, the pathology curriculum was designed to stand alone and therefore could easily be adapted by other institutions.
Comprehensively addressing postpartum maternal health risks: A content and image review of commercially-available apps

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Introduction: New guidelines for postpartum care suggest that mobile health apps can help provide complementary clinical support for new mothers during the postpartum period (up to 12 months after the birth of a child). However, to date no study has evaluated existing mobile health tools targeted to this time period.

Hypothesis: There will be wide variability in the health content, inclusivity, and accessibility of current commercially-available postpartum mobile applications.

Methods: Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) standards were used to review the peripartum apps from the Apple and Google Play stores in either the Health/Fitness, Medical, or Education categories. Apps were then evaluated for extent and quality of maternal health information, inclusivity of people of color, and accessibility to app users.

Results: Of the 301 apps from the Apple and Google Play stores, 25 met criteria for final evaluation. Of the 30 maternal health topics coded for, the median number addressed by apps was 19.5 (65%). Peripartum behaviors were more frequently addressed than peripartum outpatient care topics and peripartum acute health risks. The amount of maternal health information correlated positively with the Mobile Application Rating Scale (MARS) quality score of the app, and inclusivity of people of color in app imagery also correlated positively with the MARS quality score. Only 7 apps (29%) portrayed greater than 27% images of people of color— the percent of non-white Americans according to 2019 census estimates. There was no correlation between number of users as estimated by number of store ratings and MARS quality. In addition, apps with clinical authority had greater MARS engagement, information, aesthetics, and quality scores, but did not have greater numbers of store ratings.

Conclusions: Current commercially-available peripartum apps overall do not provide adequate maternal health information, are not inclusive of women of color, and are not optimally accessible to the target users. Higher quality apps, by MARS score, are more likely to meet these standards, but are not more likely to be downloaded and used.

Significance: Peripartum providers can be aware that patients may be using apps that provide incorrect or inadequate health information and which are not inclusive and accessible. Patients can be counseled on whether and why their chosen mobile health application is endorsed by their provider.

Grant Support: This work was completed in the Division of General Internal Medicine at the University of Pittsburgh School of Medicine. It was supported by an Institutional K-award (NIH KL2 TR001856.).
sciVelo transforms careers of early- and mid-career scientists at Pitt

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Description:  
sciVelo is a first-of-its-kind academic commercial translation program established in 2016. Now a program under the umbrella of the Innovation Institute, sciVelo was born from the Department of Biomedical Informatics and the Clinical and Translational Science Institute (CTSI) to expand the funnel of early-stage Health Sciences commercial translation projects that can be advanced towards commercial licenses or new startup companies.

Needs and Objectives:  
As an academic program, one of the main goals of sciVelo is to educate and mentor early and mid-career scientists in commercial translation of academic research. Guided by seven commercial translation themes, digital health, regenerative medicine, precision medicine, drug discovery, immunotherapy, cell therapy and brain health, sciVelo team members proactively partner with researchers to (1) help frame their basic scientific and clinical research in the context of commercial endpoints, (2) identify opportunities to file invention disclosures, (3) support commercial translation funding applications to various programs, and (4) provide project management for ongoing projects.

Settings and participants:  
Since its founding, sciVelo has trained 45 early- and mid-career scientists most commonly while they were graduate students and postdoctoral researchers at Pitt. sciVelo team members develop academic commercial translation skills and competencies that help them secure their next job, not only in academia but also outside of academia.

Evaluation:  
Since its founding, sciVelo has helped 36 team members transition to careers in technology commercialization (14%), product development (16%), management consulting (14%), project management (17%), academic/medical research (14%), regulatory affairs (6%), and beyond.

Discussion/Reflections:  
sciVelo will continue to advance careers as it provides opportunities for professional growth and leadership and is always interested in growing its team to support its mission in mentorship and education.

Resource: sciVelo.pitt.edu
A Survey of Internal Medicine Interns Regarding the Most Useful Topics to include in an Internal Medicine Track of a "Get Ready for Residency Boot Camp" Course

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Introduction: Several studies suggest that incoming interns frequently lack clinical and professional skills that residency program directors expect interns to have mastered during medical school. Residency preparatory boot camps are used as a tool to remedy this discrepancy. The University of Pittsburgh School of Medicine recently developed a fourth-year medical student boot camp that includes a general curriculum as well as specialty specific tracks. The general curriculum includes standardized patient cases (i.e. breaking bad news), simulation of acute clinical scenarios (i.e. myocardial infarction), and didactics (i.e. capacity evaluation, wellness). We performed a needs assessment survey of current IM interns at our institution about the content areas they would have found most useful in the IM track of the boot camp course.

Hypothesis: This research was hypothesis generating

Methods: We surveyed a convenience sample of IM interns in October of 2019 regarding high yield topics to include in the IM track of boot camp. Prior to the survey, the interns received a brief introduction and an overview of topics included in the general curriculum. The survey asked interns to examine a list of clinical (medical knowledge) topics and a list of “non-clinical” (communication, professionalism, patient care, and system-based practice) topics. They were instructed to select the three most useful topics from both lists for the IM track of boot camp. The survey also had a free response section that asked them to write in one additional clinical and “non-clinical” topic. The list of topics presented to the interns was developed through literature review and local expert clinician educator input. We excluded topics already included in the general curriculum.

Results: There was a 79% response rate (64/81). The most frequently identified useful clinical topics included: rational approach to antibiotics (27/64, 42%); electrolyte management (26/64, 41%); inpatient diabetes management (25/64, 39%); and acid-base disorders (24/64, 38%). Free response topics included acute pain, altered mental status, and critical care topics (i.e. respiratory failure and septic shock). The most frequently identified useful “non-clinical” topics included: cross-cover (44/64, 69%); responding to difficult or “offensive” patients (31/64, 48%); giving and receiving feedback (24/64, 38%); and adult learning theory (23/64, 36%). Free response topics included time management/organization tips and disposition/discharge options.

Conclusions/Significance: We incorporated several of the frequently identified topics into the IM track of boot camp. Our survey data could help inform development or update IM boot camps at other institutions.
Participation in a dedicated one-month Anesthesiology Professional Practice rotation as a PGY1 is associated with increased scholarly productivity during residency

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Background: Since the 2014-2015 academic year, we have implemented a one-month, non-clinical rotation for all PGY1 residents in anesthesiology, called the Anesthesiology Professional Practice (APP) rotation. This program broadly covers important topics for scholarly activity (research fundamentals including data management, basic statistics, and IRB processes; introduction of faculty researchers) and for professional development. A fundamental goal of this rotation is to provide an early opportunity for residents to pursue scholarly projects. To characterize this effect, we quantified the scholarly activity of two historical cohorts of residents: the first three resident classes to participate in the APP rotation and the preceding three classes that did not.

Hypothesis: Residents who participated the APP rotation curriculum would have overall higher scholarly productivity during residency.

Methods: Two cohorts were identified: the No-APP group consisted of three classes of residents (graduating 2015-2017) who matriculated before the implementation of the APP rotation; the APP group consisted of the first three classes of residents (graduating 2018-2020) who participated in the APP rotation. Residents entering our program in PGY2 were excluded from both groups. All scholarly activities were compiled from residency office records; a complete list is required before graduation. Using our previously-described metric [Br J Anaesth. 2013;111:468] called Scholarly Activity Points (SAP), each resident’s scholarly productivity was quantified based on the number of scholarly products, the resident’s level of participation, and the impact of the product. SAP scores were compared between these two groups, using median and IQR for description and the Mann-Whitney U test for comparison (p < 0.05 was considered significant).

Results: After excluding non-categorical residents from the classes of 2015-2017 (26 residents) and the classes of 2018-2020 (13 residents), the No-APP group (n = 33) and APP group (n = 38) were compared. The APP group recorded significantly higher overall SAP scores (317.7 [87.5 – 632.1]), compared to the No-APP group (137.5 [50 – 222.4], p = 0.026). Additionally, there were significantly more abstract presentations and journal publications in the APP group, compared to more book chapters in the No-APP group.

Conclusions/significance: After implementing a dedicated non-clinical, professional practice rotation six years ago, three resident classes have completed residency. Though there are many potential and perceived benefits from this educational intervention, we specifically sought to demonstrate an increase in scholarly productivity after implementation. Consistent with our hypothesis, participation in the APP was significantly correlated with increased scholarly activity during residency. This demonstrates an important tangible benefit of such non-clinical curriculum that offsets concerns about cost and other barriers.
#UsToo - Measurement of Sexual Harassment in Training

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Introduction: Sexual harassment (SH) has taken a prominent position in the press in recent years. The Women Physicians Health Study, published in 1998, found that 36.9% of female physicians had experienced SH. This was more frequent in training than in practice and there was a correlation between experience of SH and depression or attempted suicide.

Hypothesis: Objectives: Identify the prevalence and features of SH of pediatric anesthesiologists and pediatric anesthesiology fellows; determine the relationship between exposure to SH and burnout. We hypothesized that women experienced more SH than men, that trainees experienced more SH than attendings, and those experiencing harassment experienced higher levels of burnout.

Methods: The Maslach Burnout Inventory (MBI) Areas of Worklife Survey (AWS) and a harassment survey were sent to all Pediatric Anesthesiology Program Directors (PDs) (n=60) for distribution to their Associate Program Directors (APDs) (approximately 60) and Fellows (approximately 221). Results were analyzed using descriptive statistics and T-test for continuous MBI measures. Chi square was used for current gender identity measure.

Results: 163 responses were recorded (41 PDs (68% response), 13 APDs (unknown response rate), and 109 Fellows (49% response)). 22% (36/163) of responders had experienced SH, 28% (46/163) had witnessed but not experienced SH, and 42% (69/163) had experienced harassment of a non-sexual nature. PDs were more likely to have experienced/witnessed harassment than fellows (p<0.05). Those who experienced SH were 91% female (p<0.0001) and more likely to report Depersonalization at work (p<0.05). Those who experienced or witnessed other forms of harassment were more likely to report Emotional Exhaustion and Depersonalization (p<0.05).

Conclusion: Harassment at work is common and associated with components of burnout. Lower incidence among fellows suggests the work environment may be improving with time, but there is still much work to do to ensure a safe training environment for pediatric anesthesiologists.
A telemedicine curriculum for new pediatric interns

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Background: When the COVID-19 pandemic hit the United States, many providers were forced to turn suddenly to telemedicine (TM), the practice of using technology to provide medical care at a distance. For many, this was a difficult pivot, as few providers had previously received any TM training. In 2016 the AAFP found that a lack of training was the most common barrier to the use of TM (Moore 2016). TM education is well established in dermatology (Boyers 2015) and psychiatry (Kane 2015) but not in other graduate medical education areas. A 2019 review showed that only 17 medical schools had a TM curriculum (Waseh 2012). A local needs assessment of 82 pediatric residents showed only 8% had received any form of TM education prior to starting residency. In contrast 79% agreed or strongly agreed that TM would be essential to their practice during the COVID-19 pandemic and 67% agreed or strongly agreed that TM would be essential to their practice after the COVID-19 pandemic. We sought to create a TM curricula for pediatric trainees.

Hypothesis: Upon completion of a new TM curriculum, incoming pediatric interns will be able to define TM, weigh the advantages and limitations of TM, triage patients for TM, and have improved confidence in their ability to conduct TM visits with pediatric patients.

Methods: During residency orientation, 42 incoming pediatric interns participated in a 2-hour synchronous TM lecture that consisted of four parts:

1) Introduction to TM
2) “How to telemed”: developing a step-wise framework for a visit
3) Platform and EHR-specific TM details
4) Faculty-led small-group case-based discussion that allowed the interns to practice the skills they just learned

Likert-scale questions were administered to the interns at the beginning and conclusion of the 2-hour session. Results were analyzed using paired student’s t-tests.

Results: Thirty-two interns (76%) completed both the pre-and post-curriculum surveys. Two (6%) had received prior TM training. Results showed significant improvement in agreement with the following statements about TM: it can improve access to healthcare (pre-M=4.5, post-M=4.7, t=2.24, p=0.03), it can reduce burnout among doctors (pre-M=3.1, post-M=4.2, t=5.42, p<0.01), and it will be essential to my future practice after the COVID pandemic (pre-M=4.1, post-M=4.5, t=2.75, p=0.01). Interns also reported significantly higher confidence in their ability to define TM (pre-M=3.1, post-M=4.2, t=5.42, p<0.01), triage patients for TM (pre-M=3.2, post-M=4.0, t=4.83, p<0.01), and conduct a TM visit (pre-M=2.6, post-M=3.7, t=6.81, p<0.01). Interns felt that parts 2, 3, and 4 would be helpful to their future TM practice (100%, 94%, 94% agreement respectively); only half (16/32) found part 1 helpful. A majority (22/32) felt part 4 was the most helpful.

Conclusions/Significance: Completion of the TM curriculum resulted in improved attitudes about TM and improved confidence in the learners’ ability to conduct a TM visit. Learners found the “how to telemed” and small-group sessions to be the most helpful. This study suggests that pediatric trainees are eager to learn more about TM and that this training can be successfully incorporated into residency orientation. Other trainees and programs may also benefit from a similar curriculum.
Hybrid Lumbar Puncture Simulation as a Way to Teach EPAs 4, 11, and 12 During the Medical Student Neurology Clerkship

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Background: In 2014, the Association of American Medical Colleges (AAMC) published a list of Entrustable Professional Activities (EPAs) that students should be able to perform upon starting residency. According to student survey data, our neurology clerkship has been deficient in addressing EPAs 4 (enter and discuss orders/prescriptions), 11 (obtain informed consent for tests and/or procedures), and 12 (perform general procedures of a physician). We therefore developed a hybrid simulation experience encompassing these three skills, centered around lumbar puncture (LP).

Hypothesis: Hybrid LP simulation will improve student confidence and skill with EPAs 4, 11, and 12.

Methods: We created a hybrid LP simulation for our medical student rotators, beginning with obtaining informed consent from a standardized patient (SP) followed by performing LP on a specialized manikin and entering CSF orders into a simulated electronic chart. Students received real-time feedback from SPs and clinical preceptors. The students filled out surveys to assess their perceived confidence and skill with these activities both before and after the simulation.

Results: 84 students completed the pre-simulation survey and 70 students completed the post-simulation survey. The percentage of students who increased their confidence with LP from minimal or less to average or more was 58.24%, 38.47%, and 26.38% for LP, informed consent, and order entry, respectively. The percentage of students who improved from not being able to perform/need significant supervision to being able to perform with minimal supervision/independently was 25.27%, 47.25% and 28.58%, for LP, informed consent, and order entry, respectively. These differences were all statistically significant (p <0.0001). There was no difference in improvement between students taking the clerkship earlier in the academic year vs. later in regard to LP or informed consent (p >0.10). There was, however, a difference in regard to order entry, with a greater proportion of students increasing their confidence (p=0.0266) and perceived skill (p=0.0052) earlier in the year as opposed to later.

Conclusions/Significance: Hybrid LP simulation was effective in increasing medical student confidence and perceived skill with EPAs 4, 11, and 12. This effect did not diminish for LP or informed consent as the academic year progressed. There was some attrition of effect with order entry, though there was still measurable improvement in this skill in later groups post-simulation.
PittPharmacy Medical Spanish Micro-credential: Encouraging Multilingual Health Care Professionals

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University of Pittsburgh School of Pharmacy

In the United States, there is a growing need for multilingual pharmacists to care for the population of multilingual patients. Spanish is the most prominent non-English language that is spoken in the U.S. A major portion of the Spanish-speaking population is excluded from adequate healthcare due to barriers in language and culture. PittPharmacy offers curricular outcomes that has guided development of the Medical Spanish Micro-credential and has education standards that supports patient-centered-care in various forms.

The objective of this Medical Spanish Micro-Credential at the University of Pittsburgh School of Pharmacy is to help student pharmacists develop language and cultural skills that would allow them to better care for their Spanish-speaking patients. Through the combination of self-paced, didactic courses and experiential learning, student pharmacists will develop a conversational ability in Spanish and gain valuable cultural awareness.

The proposed Medical Spanish Micro-credential will consist of 40 hours of self-paced learning followed by 50 meaningful interactions with Spanish-speaking patients. The application process involved evaluating PharmD candidates on their past Spanish education, personal drive to complete the micro-credential, and expected impact of the experience on long-term career goals. Launched in May 2020 with a licensed eLearning Medical Spanish course, it teaches language skills and cultural awareness. Local sites with Spanish populations are being curated with the Office of Experiential Learning for Fall 2020; however, availability is subject to change due to COVID-19 safety practices. Supplemental practice such as article and case presentations, and health topic discussions will be available. Official surveys assessing students’ progress and feedback on the program are deployed at the onset of the eLearning course, partway through, and at the end, along with monthly check-ins.

The inaugural group of students (n=10) began the eLearning course in the Summer of 2020 with the expected completion of the didactic component by August 15, 2020. To date, surveys indicated positive feedback on the course and its variety of learning tactics, and overwhelmingly expressed a personal improvement in speaking ability. In light of COVID-19, experiential alternatives have been considered including a virtual weekly conversation club and research presentations. These opportunities are in development with a target of Fall 2020 for implementation.

Due to large student interest, the program will be further expanded to cater for greater student participation. There are a multitude of options to overcome language barriers, and competencies can be tailored to the participants. This can serve as an example for more pharmacy schools to adapt this program in the future and promote diversity and inclusivity.
Medical Student Perceptions of Educational Pelvic Exams Under Anesthesia

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Background - Medical student participation in pelvic exams under anesthesia (pEUAs) for educational purposes is a common practice in clinical education. The ethics of this practice, specifically informed consent, periodically come under scrutiny by the lay and medical communities. This study explores the perspectives of medical students on the need for explicit consent for pEUAs performed for educational purposes.

Methods - We distributed an anonymous, 28-item questionnaire via email to medical students who had completed their OB/GYN clerkship. In addition to attitudes on explicit informed consent for pEUAs by medical students, we assessed students’ knowledge of institutional processes for obtaining consent for these exams. Data regarding race/ethnicity, gender, training year, number of completed clerkships, the surgical service that students rotated with during their OB/GYN clerkship (benign vs oncology), and whether students’ intended residency might require them to perform a pelvic exam during training was obtained for every participant. Descriptive statistics were performed to analyze associations.

Results – Among 320 eligible participants, 154 (48%) students completed the survey through May 2020; 96 (62.3%) identified as Female, 93 (60.3%) identified as White, 21 (13.6%) as Asian, and 20 (13.0%) as Black/African American. Most (78/154 [51.0%]) participants were fourth-year medical students, and the remaining were third-year (62 [40.5%]) or research students (13 [8.50%]). Overall, 74.8% (110/154) of participants believed it was important to obtain explicit informed consent for educational pEUAs. Race/ethnicity (p = 0.034) and rotation on the gynecologic oncology rather than benign gynecologic surgical service (p = 0.002) were associated with belief of the importance of explicit informed consent for pEUAs. Notably, White students, as well as those who rotated on the gynecologic oncology service, were less likely to endorse these beliefs. Only 66 (42.9%) participants could correctly identify the institution’s informed consent process for educational pEUAs.

Conclusion - Overall, our findings indicate that the majority of medical students believe that explicit informed consent for educational pEUAs should be obtained. These results represent a shift in medical students’ attitudes on this matter when compared to prior studies, and they come at a time when many teaching institutions are considering changes to their informed consent process.
THANK YOU