The Academy of Distinguished Medical Educators
Medical Education Day
Thursday, November 19, 2015

The Academy of Distinguished Medical Educators was founded in 2006 to support and promote research, innovation, and scholarship in medical education at the University of Chicago. The Academy is led by Halina Brukner, MD, Professor of Medicine and H. Barrett Fromme, MD, MHPE, Associate Professor of Pediatrics.

In addition to hosting Medical Education Day, the Academy sponsors faculty development workshops throughout the year and funds scholarship in medical education.

**Keynote Speaker**
Debra L. Klamen, MD, MHPE
Associate Dean for Education & Curriculum
Professor and Chair, Department of Medical Education
Southern Illinois University School of Medicine

**ORDER OF EVENTS**

8:00-11:30 AM  Program and Clerkship Directors’ Education Workshop
Gordon Center for Integrative Science, Room W301-303
*Interprofessional Education*

12:00-1:00 PM  Keynote Address
UCMC P-117
*Third Year Clerkships – Let’s Get Real*
Debra L. Klamen, MD, MHPE

2:00-4:00 PM  Poster Session
Knapp Center for Biomedical Discovery 1st Floor Lobby

4:00-5:00 PM  Plenary Poster Presentations: Four Oral Abstracts
KCBD Auditorium 1103
- *Medical Student Demand for Flexible Residency Training Options*
- *Implementing a Resident Acute Care Surgery Service: Improving Resident Education and Patient Care*
- *The Impact of Scholarship & Discovery on Student Interest in Career-Long Research: A Longitudinal Study*
- *Intraoperative Surgeon-Trainee Communication with an Awake Patient*

5:00-6:30 PM  Awards Ceremony & Reception
KCBD Auditorium 1103
Induction of new Fellows of the Academy of Distinguished Medical Educators
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Keynote Speaker
Debra L. Klamen, MD’85, MHPE, is the Professor and Chair of the Department of Medical Education at Southern Illinois University (SIU) School of Medicine. Before earning her medical degree at the Pritzker School of Medicine, Dr. Klamen received her Bachelor’s degree in Genetics at the University of Illinois at Champaign-Urbana. She completed her residency in Psychiatry at the University of Illinois Hospital (UIH), becoming Chief Resident in 1988. She also completed a Masters of Health Professions Education (MHPE) at the University of Illinois at Chicago (UIC) a decade later. A Fellow of the American Psychiatric Association, Dr. Klamen has also served on the Behavioral Science Question Writing Committee of the National Board of Medical Examiners and developed and implemented a course for preclinical medical students at UIH entitled “Essentials of Clinical Medicine”. Dr. Klamen has written numerous articles on medical school education, particularly in the area of performance evaluation and assessment. She has spoken extensively on the topic of curriculum design and innovation for physicians around the country for the last 14 years. Currently, her interests include the development of curricula for medical schools in the areas of patient safety, and improving third year clerkships through a process management lens. Her passion in these areas, and in medical education in general, has earned her numerous teaching awards, including a university-wide UIC Award for Excellence in Teaching.
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The Core Mission of the Academy is to:

- Promote excellence in teaching at the Pritzker School of Medicine
- Support scholarship among medical educators
- Enhance the Pritzker School of Medicine curriculum by supporting, recognizing, and rewarding its outstanding teachers
- Build community among medical educators at the Pritzker School of Medicine
- Facilitate the creation of an environment that enhances the status of medical educators at the University of Chicago
Masters of the Academy

Masters are faculty members who have been inducted into the Academy of Distinguished Medical Educators because of their long-standing contributions to medical education and their demonstration of the following:

- Sustained excellence in teaching in the medical school
- Evidence of institutional impact of educational contributions
- Evidence of educational scholarship and/or innovation
- Serve as role models who inspire others with joy of teaching

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Associate Professor of Obstetrics and Gynecology

Nora Jaskowiak, MD
Associate Professor of Surgery

Karen Kim, MD
Professor of Medicine

Wei Wei Lee, MD, MPH
Assistant Professor of Medicine
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Professor of Anesthesia & Critical Care

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Jason Poston, MD
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Marie Tobin, MD
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Professor of Human Genetics

Ernest Wang, MD
Clinical Professor of Emergency Medicine, NorthShore University HealthSystem

Shellie Williams, MD
Assistant Professor of Medicine

James Woodruff, MD
Professor of Medicine, Associate Dean of Students
Newly Elected Fellows of the Academy

2015 Newly Elected Fellows of the Academy of Distinguished Medical Educators

Anita Blanchard, MD
Professor of Obstetrics and Gynecology

Anita Blanchard is a Professor of Obstetrics and Gynecology at the University of Chicago. For the last 11 years Dr. Blanchard has been the Residency Program Director for Obstetrics and Gynecology. In this position, she successfully facilitated the restructuring of the residency program with NorthShore University HealthSystem. Dr. Blanchard diligently worked with faculty to strengthen and modernize the program, and eventually built the residency into one of the leading OB/GYN medical education programs in the country. Dr. Blanchard has received significant recognition for her accomplishments in and dedication to medical education. In 2014, she received the Bucksbaum Institute Senior Faculty Scholar Award. In 2015, Dr. Blanchard was appointed to the ACGME, Obstetrics and Gynecology Residency Review Committee, and the American College of Obstetricians and Gynecologists’ CREOG Education Committee, as well as the American Board of Obstetrics and Gynecology Board of Directors.

Anne Hong, MD
Assistant Professor of Medicine

Anne Hong is an Assistant Professor of Medicine at the University of Chicago who has served as a primary care physician and medical educator in the Section of General Internal Medicine at the university for 38 years. Dr. Hong is a beloved and respected educator who has taught generations of Pritzker medical students and Internal Medicine residents. She has consistently received exemplary teaching evaluations, and has repeatedly been recognized with the Department of Medicine Medical Residents’ Teaching Award. In 2012, Dr. Hong was chosen to serve as the Ombudsman for Pritzker students and for all GME programs, reflecting how she is seen as a trusted advisor by trainees and peers alike. In 2013, she was awarded the Faculty Physician Peer Role Model Award. Dr. Hong continues to participate in the department’s monthly Journal Club and holds one on one teaching sessions with housestaff in the Urgent Care and Continuity Clinics.
Mohammed Minhaj is an Associate Professor, Vice-Chair for Finance/Operations, and Associate Chair for Faculty Development in the Department of Anesthesia and Critical Care at the University of Chicago. Dr. Minhaj served as the Program Director of the Cardiothoracic Anesthesiology Fellowship, and was principally involved in preparing the required documentation for the program to receive its accreditation; the program was one of the first 12 programs nationally to receive accreditation. Because of his dedication and effectiveness, he was named the Associate Chair for Residency Education and Program Director of the core program in Anesthesiology a role he served in until 2011. Dr. Minhaj has consistently received stellar teacher evaluations and in 2010, he was named the Teacher of the Year by the residents. He successfully maintained the residency’s accreditation, and pioneered new initiatives within the department, including the first annual “Ultrasound Week.” During his time in Seattle, WA, Dr. Minhaj won additional teaching awards. Since his return to UCM in 2013, he has maintained an active role in graduate medical education and is also the course director for the highly rated senior elective course “Money Management for the Young Physician”. Additionally, Dr. Minhaj serves in a variety of roles at the national level with respect to creating & implementing educational programs involved in the maintenance of certification for anesthesiologists.
Poster Abstracts
Confidence in the Patient Evaluation by Junior Resident and Physician Assistant

ADRIANNE DADE, MD; SYDEAKA WATSON, PHD; SABRINA HOLMQUIST, MD, MPH; ANITA BLANCHARD, MD; MELISSA GILLIAM, MD, MPH; LEE LEARMAN, MD, PHD, INDIANA UNIVERSITY

STATEMENT: Duty hour restrictions have necessitated the increasing use of physician assistants (PAs) at the University of Chicago's Department of Ob/Gyn. The PAs in many ways function as the junior resident on the Gynecology Service team. Some faculty have expressed concern about confidence in the ability of the PA to evaluate the patient, list a differential diagnosis, and create a plan for management.

OBJECTIVES: To describe and compare faculty and senior resident confidence in junior resident (JRES) and physician assistant (PA) evaluation of patients with non-emergent vs emergent gynecologic problems.

DESCRIPTION: Using information from focus groups and interviews with residents, PAs, and faculty, we created three emergent and three non-emergent patient scenarios. Each scenario was used to create two subtly different cases (12 total) involving a JRES or a PA. These were sent by email to 29 faculty and 28 senior residents in an anonymous, voluntary survey. Respondents indicated their perceived confidence. Survey responses were summarized with counts and proportions. We adjusted for multiple testing using the Benjamini-Hochberg method.

RESULTS: The 35 surveys received included 21 which were complete and 17 from faculty. Too few senior residents surveys (4) were available for analysis. In the 3 comparable sets of emergent case scenarios, faculty respondents tended to be more confident in the JRES (76.5%,100%,100%) than the PA(82.4%,76.5%,94.1%). In the 3 comparable sets of non-emergent case scenarios, faculty respondents tended to have less confidence in the JRES (76.5%, 64.7%,100%) than the PA (88.2%,94.1%, 100%).

CONCLUSIONS: No large differences were identified in faculty confidence in JRES and PA management of common gynecology patient problems. Faculty respondents tended to be more confident in the PA regarding non-emergent case scenarios. This may be due to the PA having a continued presence on the Gyn Service and the JRES only having a few rotations on the service. Senior resident confidence in JRES and PA management could not be assessed due a low response rate.
Survey of Medical Students’ Confidence and Knowledge of Antimicrobial Stewardship and Antibiotic Prescribing

ALBERT LEE, MS3; JENNIFER PISANO, MD

STATEMENT: The growing threat of antibiotic-resistant pathogens outpaces the ability to develop pharmaceuticals and mindful utilization is necessary to protect against growing resistance. The current state of national medical education leaves the unconfident trainee physician under the tutelage of the attending physician, who may or may not possess the expertise necessary to correctly provide appropriate care regarding microbial pathogens. Of the studies that have been conducted on the state of medical education regarding appropriate antimicrobial use, few have examined the perspectives, attitudes, and abilities of medical students.

OBJECTIVES: This study aims to identify areas of undergraduate medical education in the Pritzker curriculum whereupon antimicrobial prescribing practices of medical students can be strengthened. This information will then be used in the future to construct, initiate, and test an interventional educational module to be used by students before entering their clerkships.

DESCRIPTION: A survey was distributed to assess confidence, knowledge, and resources utilized by medical students regarding antimicrobial decision-making. The survey was distributed to the past two graduating classes of the Pritzker School of Medicine, the class of 2014 and 2015.

RESULTS: Respondents reported moderately high levels of confidence (3 to 4 out of 5) initiating antimicrobial therapy in various clinical scenarios. However, they report lower levels of confidence (2 to 3 out of 5) regarding subsequent antibiotic therapy (e.g., adjusting dose for metabolic change, recognizing common toxicities, differentiating between IgE vs. non-IgE mediated allergy). 50% of respondents answered 4 out of 7 questions correctly on the included assessment, which was also the median score. When scores are analyzed by subject matter, respondents’ reported levels of confidence did not consistently align with subject scores. Respondents also report consistently consulting colleagues regarding antibiotic decisions before literature. The online resource UpToDate was an exception, being one of the most frequently and consistently consulted resources.

CONCLUSIONS: Though respondents report having a moderately high level of confidence in their prescribing abilities, their perceived confidence is generally not corroborated by their performance on the assessment included in the survey. From this, we find information to suggest that the surveyed population inconsistently utilizes the resources provided by the Antibiotic Stewardship website, usually consulting colleagues before literature.
Urethral Catheter Placement Education: Enhanced Attitudes and Knowledge after a Targeted Training Intervention

ANDREW COHEN, MD; CHARLES NOTTINGHAM, MD; VIGNESH PACKIAM, MD; NORA JASKOWIAK, MD; MOHAN GUNDETI, MD

STATEMENT: Not much is known regarding medical students’ attitudes and knowledge of urethral catheter placement.

OBJECTIVES: Improper catheterization can result in urethral injury, which can be minimized with improved training. We aim to assess training and confidence of medical students after a targeted educational intervention.

DESCRIPTION: Third-year medical students were queried regarding their attitudes and knowledge of catheter placement prior to and after the orientation to the Clinical Biennium. The orientation to the Clinical Biennium is a structured curriculum event introducing clinical skills prior to commencement of clinical clerkships. Students rotate through various skill stations, including one for urethral catheterization. Urology residents provide a short didactic session and supervised simulation. Self-rated confidence on a Likert scale 0-5 was posed for several domains, including catheter technique, knowledge, troubleshooting, and comfort with placement in same and opposite gender. Higher scores indicate higher confidence. Factual questions were posed regarding proper insertion technique, and troubleshooting malfunctioning catheters. Previous catheter education, experience level and professional interests were assessed. A subset of students was surveyed at 3-6 months after initial training. The study was approved by local IRB(15-070).

RESULTS: Ninety two students participated in the initial survey, 41% female and 59% male. Eighty seven percent of students had never placed a catheter at time of initial survey. Students reported a desired average 4.4/5 confidence in catheter skills by graduation. Thirty eight percent of students reported prior independent learning regarding urethral catheters, which was a significant univariate predictor for increased confidence across all domains (p<0.05). There were no significant differences in confidence for those expressing desire to pursue urology or other surgical specialties compared to non-surgical fields. Confidence improved after the orientation to the Clinical Biennium across all domains (All p<0.05). Largest percentage improvement in confidence was seen for the knowledge domain, an increase of 34.9% (95%CI 30.7-39.0). Other domains had 14.0-33.5% improvement. Students initially identified proper male urethral insertion distance 16.7% of the time, improving to 95.6% after the session. Student interest in urology was modestly increased after educational session (p=0.0282). Survey response was 17% at 3-6 month follow-up at which students averaged 4 urethral catheter placements since intervention. In reflection, 37.5% of students indicated training was suitable while 62.5% desired additional training. Indeed, 75% of students rated training useful or extremely useful. Confidence in technical ability improved an additional 11.3% (95% CI 0.3-22.2) since post-Biennium survey. In the other domains, confidence was similar between post-education and later follow-up. Knowledge assessment indicated 62.5% of students retained comprehension of proper male urethral insertion distance. At all time points, medical student knowledge for troubleshooting catheters was low.

CONCLUSIONS: Improved technique for urethral catheter placement may avoid urethral injury. Furthermore, medical students strive for high confidence in this procedure. Targeted education for urethral catheter placement enhances confidence and knowledge. As clinical experience grows, these effects are durable for at least 6 months.
Preparation Medical Students for Careers in Medical Education: Results from a National Survey

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STATEMENT: The next generation of medical educators is currently in undergraduate medical education (UME) training programs. Focused curricula regarding medical education may be lacking in UME. To our knowledge, little information has been gathered from medical students regarding their individual institutional experiences in curricula teaching medical education theory and students’ access to mentorship surrounding medical education scholarship.

OBJECTIVES: Our goal was to assess the prevalence of medical education curricula, special interest groups, and research opportunities for trainees currently in UME and to gauge medical student interest in such programs.

DESCRIPTION: An electronic 8-question survey was distributed to members of the Association of American Medical Colleges (AAMC) Organization of Student Representatives (OSR) via the OSR list-serv. The survey consisted of yes/no questions pertaining to schools’ offerings, such as “Does your medical school offer any type of medical education track or certificate?” as well as perceived student interest in programs if they do not exist, such as “Do you think there would be interest in such a program if it was created?” The survey also included free-response questions for respondents to provide details on their programs, such as “Please explain your medical school’s offering(s) and describe the components of the track by year.” Responses were reviewed, themes were identified, and descriptive statistics were performed. Duplicate responses from a single medical school were combined.

RESULTS: OSR members from 47 medical schools responded to the survey for a 39% response rate (47/121), representing 29% (47/161) of all AAMC member institutions. The schools represent 29 public institutions, 17 private institutions, and 1 unknown institution. This cohort is geographically diverse with 10 schools from the northeast region, 15 from the central region, 18 from the south region, 3 from the west region, and 1 from an unknown region. Only 9 responding institutions (19%) offer a medical education track or certificate. The majority of students (69%, 24/35) where this option did not exist believed there would be interest. Only 4 institutions (9%) have a medical education special interest group, but 61% of remaining institutions (23/38) state interest exists. Finally, 24 institutions (51%) report their students struggle connecting with faculty to participate in medical education research. Common themes that emerged from institutions that do have programs included a) many medical education tracks are one option in a required scholarly concentration; b) some tracks focus on teaching medical students to be better teachers in the pre-clinical and clinical environment, while others focus on education theory and scholarship; and c) the greatest student involvement is with curricular committees, but students struggle to identify mentors when they express interest in medical education scholarship.

CONCLUSIONS: There is a cross-institutional desire for greater medical student involvement in medical education theory and research. While programs exist for residents and practicing physicians, such as the Master of Health Professions Education (MHPE), an opportunity exists to begin the process of training students for careers in academic medicine while in UME. Future work in this topic includes expanding such programs and identifying explicit knowledge and skills these programs should teach to UME students.
Leadership for Urban Primary Care Education and Transformation (LUCENT)
ANNA VOLERMAN, MD; DEBORAH BURNET, MD

STATEMENT: Primary care faces immense challenges in today’s health care system and transformation is required to effectively deliver high-quality, patient-centered, cost-effective care. Transforming primary care clinics into high performing patient-centered practices requires building cohesive teams, improving clinical operations, effectively using Electronic Medical Record, promoting patient self-management, and linking patients to community resources. Leading primary care transformation requires a robust understanding of health systems and new models of care, patient-centered practices, and data-driven population health management. A diverse, well-prepared workforce is needed to care for our increasingly diverse patient populations. In addition, primary care leaders need strong skills for working with multi-disciplinary teams, aligning incentives, leading quality improvement, change management, and building collaborative networks.

OBJECTIVES: We aim to provide training for residents and faculty to develop effective leaders for primary care transformation in urban communities. In addition, our goal is to prepare a diverse primary care workforce ready to enter primary care positions and leadership roles in underserved communities, including the expanding primary care network on Chicago’s South Side. Through these efforts, we will also support primary care practice innovations to move us toward high-performing patient-centered models of care.

DESCRIPTION: The Health Resources and Services Administration (HRSA)-funded Leadership for Urban Primary Care Education and Transformation (LUCENT) Primary Care Training Program is a multi-disciplinary program with collaboration among the University of Chicago Departments of Medicine, Pediatrics, and Family Medicine. The program consists of three components that take place over the course of two years for resident scholars and one year for faculty scholars. First, resident scholars will have enhanced ambulatory training to strengthen clinical skills specific to primary care. To broaden their experience, resident scholars will expand their ambulatory clinical training to include both academic and community-based primary care practices and also significantly increase their time in the ambulatory setting. Second, resident and faculty scholars will participate in biweekly symposia to develop the knowledge and skills needed for primary care transformation and leadership. Symposia will include a combination of didactics addressing core topics in primary care transformation, workshops to build leadership skills, and presentations about ongoing primary care innovations and projects. Symposia will be open to formal program participants and to others interested in primary care improvement and leadership. Lastly, each resident and faculty scholar will lead a clinical practice innovation project in their own ambulatory setting with strong faculty mentorship to translate the knowledge directly into practice and impact patients and clinics.

RESULTS: The 2015-2016 academic year is a planning and kickoff year for the program. Symposia will take place monthly and will be evaluated. We will begin to collect more extensive results with our first cohort of scholars beginning in the summer of 2016. Outcomes will focus on scholar, patient, clinic, and program levels.

CONCLUSIONS: Through clinical and hands-on project experiences, the LUCENT program prepares trainee and faculty physicians to enter primary care positions and become leaders in today’s ongoing transformation of primary care.
Going the Extra Mile: Predictors of Higher Milestone Achievement in Emergency Medicine Using Longitudinal Multicenter Direct Observation Data

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STATEMENT: The recently implemented Accreditation Council for Graduate Medical Education (ACGME) milestone project provides a nationally standardized, longitudinal, and comprehensive framework for resident assessment. This system allows for analysis of resident performance across all years and programs at a scope and level of detail never previously possible. Very few studies have examined the role of gender in the evaluation in residents, and to our knowledge, this effect has never been studied in emergency medicine (EM). Such analysis is especially critical as programs move towards competency-based graduation.

OBJECTIVES: We studied the effects of evaluator and evaluatee gender on the evaluation of EM residents throughout residency training, across multiple training programs.

DESCRIPTION: We examined 34,758 direct-observation sub-competency evaluations of 359 EM residents by 286 EM faculty members at eight emergency departments (6 academic and 2 community programs). Data were collected from July 2013 to July 2015 using a single digital direct observation evaluation tool. A mixed effects ordinal logistic regression was used to model the data. The outcome was the milestone level (score) given to a resident, and the predictor variables included resident and attending gender, training program, EM sub-competency that was evaluated, experience level of the resident, as well as the interactions between these variables. Experience level was calculated as the total amount of time a resident has spent in residency when the evaluation was submitted. Random effects were modeled at the resident and attending level.

RESULTS: Significant predictors of milestone score included resident gender, resident experience level, EM program, and the sub-competency evaluated (p< 0.001 for each factor). For both male and female residents, resident experience level was a very strong predictor for the milestone score (p< 0.001), which supports the validity of milestone evaluations. Scores given to residents varied significantly among the eight departments (p< 0.001), which may indicate a difference in resident quality among sites, or may indicate poor reliability of milestone evaluation system. According to our model, female residents were evaluated higher than their male counterparts for the first 18 months of residency (p= 0.004). However, the rate of milestone attainment, defined as the increase in the average milestone score achieved over unit time as calculated by the linear ordinal logistic regression model, was higher for male residents throughout the entire 3 year residency (p< 0.001), which lead to an average higher milestone score for men during the second year of residency that continued until graduation. No overall differences in milestone scores were found between evaluator gender (p= 0.62), or the gender pairings of evaluator and evaluatee (p= 0.54).

CONCLUSIONS: The time spent in residency, training program, and resident gender appear to play significant roles in the milestone evaluation of EM residents in our study population. However, neither evaluator gender, nor gender pairings between the evaluator and evaluatee is a significant predictor of score. Further investigation will include analysis of the specific sub-competencies that may be driving these outcomes.
Assessment-Oriented Oral Case Presentations in the Academic Emergency Department: Objective Measurement of Presentation Content and Clinical Context

BRENNAN HODGSON, MS2; JOSEPH LYKINS, MS3; DAVID HOWES, MD

STATEMENT: The assessment-oriented oral case presentation (AO-OCP) has been presented as an effective alternative to the traditional oral case presentation (T-OCP). AO-OCPs have been demonstrated to take less time with similarly reported attending satisfaction. However, objective measures of content, including physical exam (PE) and review of system (ROS) findings, have not previously been measured. Resident perceptions of the styles and the clinical contexts in which they are used have also not been addressed.

OBJECTIVES: Objectives included: assessing resident perceptions of AO-OCPs and their clinical utility, quantifying objective measures of presentation content, frequency of external interruptions, frequency of didactic teaching moments, and resident and attending satisfaction for both OCP styles to draw conclusions of their similarities and differences.

DESCRIPTION: A two phase study was conducted in the University of Chicago Adult Emergency Department. In the first phase, resident perceptions of AO-OCPs were collected via an online survey. In the second phase, researchers observed OCPs presented by emergency medicine (EM) residents to EM attendings. After each OCP, both the resident and attending were asked to complete a paper-based survey to evaluate the OCP. Results were analyzed using T-tests.

RESULTS: A survey of residents showed that residents believe they use the AO-OCP on a regular basis. Residents thought AO-OCPs took less time and used fewer PE findings. Residents reported they were most likely to use the AO-OCP when the diagnosis was clear and when communicating with EM colleagues, an admitting team, or a consultant. Over 80 different OCPs were observed -- 48 T-OCPs and 33 AO-OCPs. AO-OCPs were shown to take about half the time of T-OCPs, about 2 min vs 4 min (p<0.01). This decrease in time was paralleled by a decrease in both the number of PE and ROS findings in the AO-OCP (p=0.02 and p<0.01, respectively). The two styles did not significantly differ in the number of external interruptions (p=0.07) or the number of teaching moments (p=0.90). Residents reported higher confidence in preliminary diagnosis when using the AO-OCP (p<0.01), and higher ratings in organization (p=0.02) and overall satisfaction (p=0.03) with the AO-OCP. They rated both perceived content (p=0.25) and desired additional data (p=0.25) similarly. Attendings reported a higher overall satisfaction with the AO-OCP (p<0.05), while rating organization, content, and desired additional data similarly (p=0.06, p=0.39, p=0.18 respectively).

CONCLUSIONS: The AO style represents a trade-off between a decrease in time and a quantified loss in content. This trade-off is justified by higher reported rates of satisfaction with no perceived loss of content associated with the AO-OCP among residents and attendings. In the fast-paced, high acuity setting of an ED, where delivering pertinent information rapidly is necessary for patient care, the AO-OCP presents a viable alternative to the more T-OCP currently taught at the medical school level.
The Spreading Teen-Research Inspired Videos to Engage Schoolmates (STRIVES): Promoting Diversity in Medical Education

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STATEMENT: There continues to be a great need to promote entry of minority students into the field of health research. Previous studies demonstrate that online social-networking interventions that aim to boost career interests may be more effective for underrepresented racial and ethnic groups as well as teens from low-income families than for non-minorities. Drawing upon these theories for motivating and engaging teens, this research aims to outline and assess the creation process of a novel peer-to-peer social media marketing campaign.

OBJECTIVES: The Spreading Teen-Research Inspired Videos to Engage Schoolmates (STRIVES) program engages minority youth in an intensive clinical research program to create a viral social media campaign to inspire their high school peers to consider careers in clinical research. During the five-week summer program, Chicago Public School students perform focus groups and surveys of their peers to find out what makes a viral social media campaign and what influences their careers choices.

DESCRIPTION: The focus group transcripts allowed us to catalog which health issues matter to teens, what teens care about, how teens decide on their careers, and other major themes pertaining to teens, to ultimately decipher what types of messages would be most likely to motivate their peers to consider a career in clinical research.

RESULTS: We found that the focus group data present a robust set of themes that highlight teens’ impressions of research as boring, time-consuming, and difficult. Focus group participants from 2015 note that they would be most interested to hear about clinical research related to health issues relevant to their communities and their generation. Additionally, the 2015 cohort identified competitions and challenges as key motivators for driving teen action, while also highlighting new channels of social media (e.g. Buzzfeed) used by teens for information.

CONCLUSIONS: Reflecting on the STRIVES 2015 video creation process and understanding how teens process terms like ‘research’ and ‘careers’ will be undoubtedly beneficial in improving interventions that target the entry of minority students into careers in health research.
STATEMENT: In 2013, the Association of American Medical Colleges (AAMC) included “Personal and Professional Development (PPD)” as a competency domain to be taught and assessed in medical school. As such, medical students are now formally expected to demonstrate qualities required to sustain lifelong personal and professional growth. However, while most schools have elements of PPD programming in place, instruction in these domains has traditionally relied primarily on the hidden curriculum or paracurricular activities such as Wellness workshops. Few comprehensive programs and assessment methods exist.

OBJECTIVES: The first objective of the present study was to survey first-year students on PPD competencies at two time points during their first year of medical school. The second objective was to map existing Pritzker School of Medicine (PSOM) events to PPD skills and use survey results to plan events targeting students’ self-reported deficiencies. The final objective was to initiate development of a tool for students and advisors to track PPD progress and develop individualized plans.

DESCRIPTION: A 46-item survey consisting of 44 Likert items and 2 free response items was developed based on a literature review and PPD themes from the AAMC Physician Competency Reference Set as well as Scottish and Canadian standards. This survey was then administered to Pritzker first year students in October 2014 and February 2015 and the data was analyzed using descriptive statistics and t-tests. Free response survey answers as well as PSOM events from the 2014-15 academic year were then mapped to PPD skills assessed in the survey.

RESULTS: Seventy-five out of ninety first year students completed both iterations of the survey (at 2 months and 6 months into the academic year), giving a response rate of 83.3%. The three lowest rated skills on the baseline survey were “Incorporating exercise into my weekly routine”, “Seeking advice from advisors and mentors” and “Balancing demands of studying with other commitments”. Significant increases in self-rated proficiency between the two survey time points were found for “Balancing demands of studying with other commitments”, “Learning from reading materials”, and “Learning from one on one preceptorships”. Significant decreases were not found for any survey items. In total, eighty PSOM events from the 2014-15 academic year were mapped to PPD survey skills.

CONCLUSIONS: The high response rate indicates that sequential surveying may be a reasonable way to both track evolving class-specific needs and also to allow students the opportunity to follow and reflect on their own development. The fact that there were statistically significant increases in competency in the short time between surveys suggests that progression throughout the course of medical school is a reasonable goal. Future work will focus on creating a student portfolio to allow students to assess their own progress over time and also to identify and attend events mapped to self-reported deficient PPD skills. Additionally, due to concerns about the validity of self-assessments, another future direction will center on soliciting third party assessments of PPD competencies from peers, faculty and mentors to facilitate comparison between self and third party ratings and to provide additional information for student reflection.
Intraoperative Surgeon-Trainee Communication with an Awake Patient

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STATEMENT: With improved local and regional anesthetic techniques, surgeons are increasingly performing procedures on awake patients, which offer shorter recovery times and decreased costs. However, such procedures present a significant challenge for academic surgeons. With an awake patient, attending surgeons must balance their coaching and instruction of a trainee with the emotional and physical comfort of the listening patient.

OBJECTIVES: While several studies have identified patient anxiety in awake procedures, none to our knowledge has qualitatively explored the views of those most familiar with awake procedures—the attending surgeons who perform them. Moreover, no work has examined the surgeon-trainee-patient relationship with awake patients. Using semi-structured interviews with attending surgeons, the aim of this study was to understand surgeons’ current practices for communicating with awake patients and their views of the challenges they faced in interacting with trainees during such procedures.

DESCRIPTION: Twenty-three semi-structured interviews were conducted at two teaching hospitals in the Chicago area. During the interview, all surgeons were asked about their practices for communicating during awake (no sedation or conscious sedation) procedures, and all surgeons were asked specifically about how they communicate with trainees during such procedures. Attending surgeons performing awake procedures were identified and interviewed in the departments of General, Orthopedic, Plastic, and Vascular Surgery, Ophthalmology, Obstetrics and Gynecology, Neurosurgery, Urology, and Dermatology. Interviews were recorded, transcribed, de-identified, coded, and analyzed using the constant-comparative method until saturation was reached.

RESULTS: All comments (n=96) regarding attending surgeons’ interactions with trainees were organized into 3 domains: communication that includes the patient (28%, 27/96), communication that excludes the patient (46%, 44/96), and negotiating trainee involvement (27%, 26/96). When surgeons described teaching conversations that intentionally include the patient, they discussed using direct verbal teaching or explaining, and/or teaching in such a way to explicitly include the patient. In discussing communication with a trainee that excludes the patient, surgeons noted using several techniques: non-verbal communication, teaching before or after the procedure outside the room, teaching quietly, or using euphemism, obfuscation, or jargon to exclude the patient from the teaching conversation. Surgeons described various approaches to managing trainee involvement during awake procedures. Surgeons noted that awake patients had varying ideas about how involved the trainee was in their procedure, and that in some cases trainee involvement contributed to patient anxiety. Perceived patient anxiety was noted as a driving force for decreased trainee involvement in awake procedures. Lastly, surgeons had differing approaches to disclosing trainee involvement, from explicitly asking permission for resident involvement to intentionally obscuring it from the patient.

CONCLUSIONS: Our research highlights the tensions that exist between a surgeon’s duty to best care for their patient and to properly instruct and give experience to their trainees. The presence of an awake patient significantly influences surgeon-trainee communication. This suggests that further work is needed to optimize teaching in the increasingly common setting of awake surgery. Additionally, deception regarding trainee involvement suggests the need for closer examination of the best methods for informing and consenting patients about trainee involvement in their care.
Evernote in Plastic Surgery Education: Technology Enhances Resident Collaboration

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STATEMENT: The landscape of surgical education is evolving nationwide. With duty hour restrictions and a changing workplace, efficiency in resident education is of paramount importance. Electronic health records promote proficient cooperation among care providers, yet no universal system exists to share and edit notes directly with other residents. We aimed to optimize file sharing amongst Plastic Surgery residents to promote efficient preparation for operative cases and to improve postoperative patient care without additional e-mails or the use of paper.

OBJECTIVES: In March 2014, residents of the Section of Plastic & Reconstructive Surgery at the University of Chicago Medicine created a shared digital notebook using Evernote (free, iOS or Android) to allow swift distribution of administrative documents and personal notes on operative procedures. Shared notes were intended to review technical steps and attendings’ preferences regarding patient positioning, prep, draping, sutures, and instruments.

DESCRIPTION: Each resident was encouraged to create and edit their own notes on operative cases and include pictures, drawings and references to journal articles. These notes were catalogued into the Evernote application, and the joint account was made available to all plastic surgery residents.

RESULTS: All PGY2-6 Plastic Surgery residents were surveyed regarding their use of Evernote, with 100% survey response. Additionally, all notes created to date were analyzed and categorized. From March 2015 to September 2015, residents created a total of 156 shared notes: 18 administrative, 29 reviewed general plastic surgery topics, 109 detailed intraoperative steps, and 6 notes discussed postoperative pathways. All residents accessed Evernote on their laptop computer and 90% also used their smartphone. Only 1 individual also reported using a tablet. Eighty percent of residents referenced Evernote to prepare for surgical cases and 50% also used it for administrative purposes. Forty percent stated that it was helpful for InService exam preparation. The majority (70%) indicated that they had not used this resource prior to its adoption by the section. When asked about usage frequency, 40% of residents used the Evernote application daily or weekly, and 60% of residents accessed the shared notebook multiple times per month. If given 24-hours to prepare for a case, 100% said they would use an online textbook; however, if given 30-minutes to prepare, 90% or residents cited that they accessed a note in Evernote written by a colleague. Interestingly, no individual stated that they used a physical textbook for operative case preparation. Nine residents stated that attendings should have access to the account to edit notes and agreed with potentially creating a nation-wide Evernote database to share case notes across residency programs.

CONCLUSIONS: Evernote has proven to be a valuable educational tool and has enhanced collaboration among Plastic & Reconstructive Surgery residents.
A Novel Curriculum for Emergency Medicine Intern Education

ERIC SHAPPELL, MD; JAMES AHN, MD

STATEMENT: Our new intern curriculum and conference structure address the need for rapid development of fundamental knowledge and skills required to manage common true emergencies and to efficiently work up common chief complaints. This need has been previously described in the context of intern orientation programs, but not year-long curricula.

OBJECTIVES: Our curriculum aims to develop the knowledge, skills, and attitudes of emergency medicine interns required to effectively and efficiently manage common true emergencies and chief complaints.

DESCRIPTION: Our program focuses on twenty-five high-yield topics in emergency medical management and is designed in three parts: first, an online asynchronous curriculum with resources for review prior to conference aims to contextualize and transfer explicit knowledge; second, weekly small-group interactive sessions led by faculty and fellows reinforce concepts with a focus on transference of tacit knowledge; third, monthly intern-specific simulation cases emphasize practical application and assessment of knowledge and skills. Program assessments are in development and include entry and exit quizzes to assess knowledge, entry and exit surveys to assess attitudes, and graded simulation sessions to assess both knowledge and skills.

RESULTS: A global needs assessment survey was conducted amongst University of Chicago emergency medicine residents and faculty. Of 23 responses, 96% agreed or strongly agreed that a dedicated intern curriculum added value to residency education, 91% agreed or strongly agreed that the curriculum should involve dedicated conference time, and 87% agreed or strongly agreed that the curriculum should involve dedicated simulation time. In addition, residents and faculty were surveyed to assess which topics would be most valuable to include in the intern curriculum. The topics with the most "strongly agree" responses were airway management (91%), sepsis (87%), shock, and EKG interpretation (82% each). A targeted needs assessment of current intern medical knowledge on selected topics is currently underway. Entry and exit attitudes surveys and graded simulation sessions are also currently under development.

CONCLUSIONS: Our three-pronged curriculum addresses the need identified by emergency medicine residents and attendings for intern-specific education and focuses on topics agreed upon as those most necessary for interns to master. A targeted needs assessment and measures of curriculum efficacy including knowledge and behavioral advancement (Kirkpatrick 2 and 3 levels of evaluation) are required in order to further characterize our target learners and highlight areas for improvement.
Development of a Laboratory Based Training Curriculum for Microsurgery

ESSIE KUEBERUWA, MD; NANCY SCHINDLER, MD, MHPE; MICHAEL HOWARD, MD

STATEMENT: The Halstedian apprenticeship model, in which skills are acquired in the operating room in the course of routine patient care, has long been the foundation of surgical training. Recent innovations in surgical education, using defined curricula, continuous assessment, and simulation, have proven effective in developing operative skill with greater efficiency and potentially lower patient risk. Microsurgery is a technically-demanding and often unforgiving modality. However, little is known about whether it can be effectively taught outside of the operating room. We hypothesized that novice plastic surgery residents would demonstrate subjective and objective improvement in microsurgical skills upon completion of a lab based microsurgery curriculum.

OBJECTIVES: Our objective was to investigate our hypothesis, “That novice plastic surgery residents would demonstrate subjective and objective improvement in microsurgical skills upon completion of a lab based microsurgery curriculum.”

DESCRIPTION: A one-day curriculum was designed for resident training. All participants completed a pre-curriculum self-assessment. Following a one-hour lecture, each resident performed a pre-curriculum arterial anastomosis on a turkey femoral artery, during which he or she was evaluated using the Structured Assessment of Microsurgery Tool (SAMS). Each resident then completed a microscope and instruments workshop and observed faculty demonstrations of rat arterial exposures and anastomoses. Each resident then independently practiced rat femoral and carotid anastomoses. At the end of the session, each resident completed a post-curriculum arterial anastomosis, during which he or she was assessed by the same evaluator. They also repeated the subjective test. Statistical analysis of outcome data was performed using paired students’ t-tests.

RESULTS: Ten residents, PGY 1-6, completed the curriculum. After the course, there were statistically significant increases in all areas of resident self-assessment (p<0.01). Comparing pre- and post-curriculum there were trends toward improvement in all tested parameters and a statistically significant improvement in overall objective technical performance (p<0.05). The greatest improvements were seen in the PGY 1-3 group.

CONCLUSIONS: Laboratory based microsurgical curriculums provide a controlled, risk-free environment in which residents can improve their subjective and objective microsurgical skills. Further study will determine if skill improvement in the lab transfers to higher competency in the operating room and whether this skill is retained long-term. A microsurgical skills training lab should be considered as an adjunct to resident education across all programs in the country.
The Value of Utilizing Multiple Learning Methodologies in Medical Imaging Education – A Survey of Non-Radiology Medical Trainees

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STATEMENT: A strong understanding of anatomy is fundamental for success in medical care and in order to build a strong foundation referenced in future medical course work. Additionally, a study by Orsbon et al. showed that physicians across specialties consistently rated medical imaging education during anatomy as important. While studies have looked at the opinions of medical school faculty and undergraduate medical students who have recently completed anatomy courses endorse, the preferences and opinions of undergraduate medical students and post-graduate trainees once they gain clinical experience on medical imaging education have not been solicited. It is important to incorporate these clinicians’ in training opinions, given their unique and timely perspective on how pre-clinical medical courses can impact their clinical learning and understanding; specifically, how this critical element of medical school impacts the integration of concepts further on in their education which plays an elemental role in all subjects.

OBJECTIVES: The purpose of this study is to identify medical trainee preferences and effectiveness for learning medical imaging. In particular, we seek to improve imaging educational methods by differentiating current trainees’ commentary on which requirements result in a greater depth of synergistic understanding, in order to optimize patient care.

DESCRIPTION: The study received IRB exemption and was performed at a single academic center using an anonymous email survey supported by validity evidence. Medical students (MS2s and MS4s), interns, and residents were surveyed, followed by descriptive and chi-square analyses as appropriate (using SPSS software). Non-response bias analysis was conducted using both population comparison and wave analysis.

RESULTS: A total of 177 residents (54), interns (17), and medical students (106) responded representing a quality sampling without evidence of bias, for a response rate of 38.2%. The most frequently utilized learning method during undergraduate medical education for students, interns, and residents was self-directed interactive (80.7%, 66.7%), with the least common being small group discussion (50.5%, 46.7%, respectively); however, the more clinically experienced residents rated small group as more beneficial (82.2%) while interns and students preferred self-directed learning (71.6%). Additionally, all participants reported that utilizing multiple learning methods was quite or extremely important for building a synergistic understanding of anatomical relationships (no significant difference between the groups, χ²(4)=7.26, p=0.123). Unexpectedly, medical students and interns rated the higher-level Bloom’s Taxonomy question as more pertinent in providing clinical care than residents (41% and 18.4%, respectively) with a statistically significant difference (χ²(1)=6.229, p=0.013).

CONCLUSIONS: Data collected demonstrates the need to use multiple learning methodologies when teaching medical imaging and these skills are tied to a deeper appreciation of the concepts and potentially patient care. Medical curricula should be adjusted to target the value medical imaging brings to optimizing patient outcomes.
STATEMENT: Prior research has shown that pediatric residents do not consistently conform to the national guidelines for asthma care and that adherence does not improve with level of training. University of Chicago Medicine’s (UCM) pediatric residency’s standardized asthma teaching includes a focused lecture on asthma management every July.

OBJECTIVES: This study investigated 1) current UCM pediatric residents’ knowledge of asthma classification, asthma management and asthma action plans, 2) incoming pediatric residents’ asthma knowledge, and 3) the utility of an online asthma educational module.

DESCRIPTION: An asthma online educational module was developed in Oracle by a pediatric faculty member (NP). The goals of the module were to improve resident physician knowledge of asthma classification, asthma management and completion of asthma action plans in the EMR. Prior to implementation, a needs assessment survey was distributed to current and incoming pediatric residents to assess the value of such a module. This survey included Likert statements regarding competency in asthma management and a 6-question quiz that tested residents’ asthma knowledge.

RESULTS: Incoming and current residents completed the survey, with a 36% (n=31) and 37% (n=10) response rate, respectively. Current residents had received the residency program’s standardized asthma teaching, while incoming residents had not. None of the residents completed the asthma online educational module prior to completing the survey. When queried, only 30% of incoming residents felt competent in asthma management, and only 30% believed they had received adequate training in asthma management prior to residency. Among current residents, > 85% agreed that they were competent in asthma management and had received adequate training in asthma management, and >80% agreed that an online asthma management module would be beneficial. The mean test score (≤100) for current residents was 75.8 and 55.1 for incoming residents (p<0.05).

CONCLUSIONS: The study results served as a needs assessment for our residency program’s asthma education. Contrary to the results of prior studies, this study revealed that current pediatric residents demonstrate knowledge of asthma management that conforms with national guidelines. Moreover, the data highlighted the feelings of unpreparedness many incoming residents experience regarding pediatric asthma management. This study confirmed the need for an online asthma educational module at the UCMC pediatric residency program. Furthermore, this research demonstrates the potential role of supplementary online modules in resident education.
STATEMENT: Catatonia is a neuropsychiatric syndrome that can be caused by a diverse number of psychiatric, neurologic, and general medical conditions. Catatonia is mistakenly thought to be rare, and is under recognized by psychiatrists and other physicians. Medical etiologies of catatonia are frequent, especially in the general hospital. There has been no systematic study of physicians’ knowledge of catatonia.

OBJECTIVES: First, to assess resident physicians’ attitudes towards catatonia and its relevance to their practice, and their knowledge of catatonia signs and symptoms, treatments, and medical complications. Second, to test the efficacy of a brief online teaching module in improving residents’ knowledge of catatonia.

DESCRIPTION: A survey was administered to University of Chicago residents in psychiatry and internal medicine (IM). The survey included attitude ratings towards catatonia and its relevance to their practice and knowledge questions regarding the signs, symptoms, treatments and complications of catatonia by selecting from a list of correct and distractor answers (overall ratio 11 correct: 21 distractor answers). Following the survey, residents were invited to participate in a brief (10 minute) online teaching module, which was followed by a post-education survey with the same knowledge questions. Participants were asked to generate a unique identifier to assist in tracking pre-post survey completion.

RESULTS: In the pre-education survey, 20 psychiatry residents and 36 IM residents participated. Both groups rated the relevance of knowing about catatonia as significantly higher than their comfort recognizing or managing it (p<0.01). Psychiatry residents felt more comfortable recognizing and managing catatonia compared to IM residents (p<0.01). Overall, the psychiatry residents compared to IM identified significantly more correct answers (73% vs 32%, p<0.01). 10 psychiatry residents and 9 IM residents took the online education module and participated in the post-education survey. Of the completers of the post-education survey, their rates of identifying correct answers rose from 59% to 82% (p<0.01), and rates of selecting distractor answers fell from 12% to 5% (p<0.01). The online educational materials were considered to be useful and of appropriate length by all participants.

CONCLUSIONS: Our survey provides evidence that there is a significant knowledge deficit regarding catatonia, particularly amongst the non-psychiatry residents in our sample. Despite this knowledge deficit, catatonia recognition and management was considered relevant to the practice of both psychiatry and IM residents. A brief, 10 minute, online educational module is a feasible and potentially effective method of teaching about catatonia. Educational strategies to improve recognition and management of catatonia should be developed.
Narrative Medicine and the OB/GYN Housestaff Experience

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STATEMENT: Over the past two decades, resident physician burnout has been well described in the literature. Hypotheses: (1) Trainees in the University of Chicago Medicine obstetrics and gynecology (OB/GYN) department will display the same moderate-to-high levels of burnout seen nationally. (2) The residents and fellows participating in these reflective writing workshops will demonstrate lower levels of burnout and higher levels of empathy at the end of the study period.

OBJECTIVES: To introduce narrative medicine into the resident experience during the Gynecology Oncology rotation and investigate its impact on burnout and empathy.

DESCRIPTION: Participants included OB/GYN residents of all levels (R1, R2, R3, R4) during the 2013-2014 academic year at a single institution. 28 residents were eligible to participate. Residents completed a baseline survey that included the Maslach Burnout Inventory (MBI), a modified interpersonal reactivity index (IRI) and questions including a self-care index and subjective experience of their clinical work. All residents then participated in a pilot program consisting of four sessions led by a resident/fellow team. Each session emphasized a specific theme and included the review of a narrative essay, poem or short story. This was followed by an optional personal writing exercise and a group discussion. The sessions were structured with predetermined questions led by the group leaders. After the four sessions, each resident repeated the comprehensive survey. MBI scores were compared using McNemar tests and continuous variables. IRI and self-care indices were compared using paired t-tests.

RESULTS: Eighteen residents participated in this study: three R1, five R2, three R3 and seven R4. Twelve residents had complete data for pre-test and post-test comparison. Burnout profiles improved in the domain of emotional exhaustion (p=0.016) but worsened in depersonalization (p=0.07). Results were mixed but not significant in the personal accomplishment domain (p=0.221). There were no significant changes in IRI scores. The number of narrative medicine sessions attended did not impact these changes.

CONCLUSIONS: Introduction of a narrative medicine program into the housestaff didactic curriculum is feasible. Improvement was seen in the domain of emotional exhaustion. However, the intervention did not significantly impact feelings of depersonalization or personal accomplishment. The full impact of this program may be realized through greater resident participation and involvement in more sessions. Further research is needed to determine whether educational interventions can impact burnout and empathy in OB/GYN residents.
Hospital Horror Story: Situational Awareness to Assess Interns’ Recognition of Hospital Hazards

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STATEMENT: Patient safety training has recently become a paramount focus of academic health systems, and the Accreditation Council for Graduate Medical Education’s (ACGME) Clinical Learning Environment Review (CLER) has called for formal and hands-on patient safety training during residency. However, while many institutions train housestaff to mitigate hospital hazards, few have exploited the crucial concept of situational awareness (i.e. mindfulness of the patient environment) to teach patient safety. One method to promote situational awareness is through the embedding of safety and low-value hazards into simulation-based training exercises.

OBJECTIVES: To assess incoming interns’ ability to identify safety and low-value hazards of hospitalization in an inpatient simulation designed to promote situational awareness.

DESCRIPTION: An inpatient simulation was constructed in collaboration with the University of Chicago Simulation Center as a required component of graduate medical education (GME) orientation. Incoming interns were given ten minutes to independently review a mock chart and list all hazards they identified in the simulated hospital room. Eight safety hazards (e.g. penicillin allergy) and four low-value hazards (e.g. unnecessary Foley catheter) were included in the simulation based on Medicare Hospital Acquired Conditions, AHRQ Patient Safety Indicators, and Choosing Wisely recommendations. Interns completed a short survey on their prior safety training in medical school, and a follow-up survey one month after beginning internship. Simulation performance was measured by the percentage of total hazards identified correctly. T-tests were used to compare safety versus low-value hazards and to associate performance with prior safety training.

RESULTS: One hundred twenty-five interns (100% of those eligible) participated in the simulation, representing thirteen specialties and sixty medical schools. 73.5% (89/121) had received prior safety training in medical school, and 50.0% (61/122) were satisfied with their prior safety training. The mean percentage of hazards correctly identified was 50.4% (median 50.0%, SD 11.8%). Interns identified significantly more safety hazards (mean 66.0%, SD 16.0%) than low-value hazards (mean 19.2%, SD 18.6%) (P < 0.001). There was no significant association between hazard identification and prior safety training or satisfaction with prior training. Interns entering highly procedural-intensive specialties identified significantly more safety hazards (mean 69.1%, SD 16.9%) than those entering less procedural-intensive specialties (mean 61.8%, SD 13.7%) (P = 0.012). One month post-simulation, 68.9% (82/119) of interns reported being more aware of how to identify hospital hazards, and 52.1% (62/119) had taken action during internship to reduce a hazard that was included in the simulation.

CONCLUSIONS: Interns identified significantly more safety hazards than low-value hazards in the simulation. Prior safety training in medical school was not associated with interns’ ability to detect hazards, and satisfaction with prior training was low. The simulation resulted in increased situational awareness leading to hazard mitigation one month into internship. This highlights the need for augmentation of experiential learning and situational-based training in medical education, and reinforces the ACGME’s position that formal patient safety training is needed in GME.
Medical Students’ Knowledge and Attitudes about Eating Disorders

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STATEMENT: Nearly half of eating disorder (ED) cases go unrecognized. Primary care providers often represent a first line of contact through which patients disclose mental health problems, but many providers lack knowledge of or have negative attitudes towards diagnosing and treating EDs. Medical students may be an ideal target for changing provider behavior towards EDs, given their early stage of training.

OBJECTIVES: This study examined medical students’ knowledge of EDs and attitudes towards patients to inform the development of a curriculum in order to improve training in ED care at the earliest stage of medical education.

DESCRIPTION: All medical students from the University of Chicago were invited to participate; 141 students responded to survey questions. Thirty-four percent identified as first years, 34% second years, 18% third years, 12% fourth years, and 2% as “other.”

RESULTS: Students endorsed moderate to high knowledge of EDs. Most respondents identified osteoporosis (87%) and cardiac arrhythmias (83%) as physical complications of anorexia nervosa (AN); however, fewer students endorsed neuromuscular abnormalities (69%) and cerebral changes (65%) as consequences of AN, and 16% said they did not know any consequences. Fear of fatness was correctly endorsed as a diagnostic criterion for AN by 50% of respondents, but less than half correctly identified any other criteria and 23% stated they did not know. In terms of physical complications of bulimia nervosa (BN), 82% identified metabolic changes, 77% esophageal tears, and 70% enlarged parotid glands, but only 40% recognized delayed gastric emptying and 20% said they did not know. Two thirds incorrectly responded or stated they did not know the duration of AN or BN, and only 33% recognized correct treatment therapy. Sixty-nine percent of respondents had no experience working with patients with EDs during medical school, 9% had experience prior to medical school, and 67% had attended zero or one lecture on the topic. More than 85% of students endorsed non-blaming attitudes towards EDs, specifically, that symptoms will not resolve without treatment (87%), the illness is severe (87%), patients are not responsible for their own condition (88%), the illness has a consequence on quality of life (100%), and EDs impact a patients’ family and friends (96%). Students were less optimistic about disease outcomes; only half believed patients can control symptoms (53%) and 88% considered the illness chronic. Importantly, 93% stated they are likely to see a patient with an ED in future clinical practice, but only 24% endorsed feeling comfortable treating a patient with an ED.

CONCLUSIONS: Results indicate that the majority of medical students understand the severity of EDs, but they show more pessimism about outcomes for patients. Students seem familiar with physical complications of AN and BN, but showed lower accuracy identifying diagnostic criteria and treatment and had limited experience working with ED patients. Thus, undergraduate medical training should focus on increasing knowledge of EDs and experience working with this patient population. Developing a competency base will help these physicians-in-training gain confidence in detecting EDs in future clinical practice.
STATEMENT: Scholarly concentration programs are increasingly prevalent in the US, yet the goals of participating students have not been described.

OBJECTIVES: To compare importance of student goals against gender and student career aims, including interest in highly competitive residencies, career research, and academic medicine.

DESCRIPTION: An anonymous survey was distributed electronically to first year students who matriculated at the Pritzker School of Medicine in 2014 and 2015. Dual degree students were excluded. Students ranked the importance of 14 goals related to participation in the Scholarship & Discovery program on a 5-point Likert scale. Students also reported their career interests. Data were analyzed using the Wilcoxon rank sum test, except for the relationship between gender and career goals, which used the chi-square test (STATA 14©, College Station, TX).

RESULTS: One hundred twenty five (78%) of 161 students responded, including 67 women and 58 men. Forty nine (40.2%) were interested in highly competitive residencies, 54 (43.5%) were interested in career-long research, and 73 (58.4%) were interested in academic careers. Compared to women, men were more likely to rate first authorship as an important goal (33.9% vs 19.4% p=0.03) and express greater interest in highly competitive residencies (50.9% vs 29.2%, p=0.02) and academic careers (69.6% vs 49.3%, p=0.02). Interestingly, women valued mentorship more highly than men (83.6% vs 62.5%, p=0.01). Compared to their peers, students interested in highly competitive residencies placed greater value on manuscript publication (55.1% vs 27.4%, p=0.002), first author publication (34.7% vs 20.6%, p=0.02), and enhanced competitiveness in the residency match (71.4% vs 52.8%, p=0.01). Compared to their peers, students interested in career-long research placed greater value on development of a career-long scholarly interest (53.7% vs 38.6%, p=0.02), development of specialty-related expertise (31.5% vs 22.9%, p=0.03), first author publication (35.2% vs 20%, p=0.01), learning to develop a research question (68.5% vs 47.1%, p=0.03), learning to present a poster (31.5% vs 20.0%, p=0.01) and performing statistical analysis (42.6% vs 25.7%, p=0.01). These students also placed more importance on the Scholarship & Discovery program in their decision to matriculate compared to their peers (77.8% vs 47.1%, p=0.0001). Similar results were found for students interested in academic careers.

CONCLUSIONS: In this evaluation of a scholarly concentration program, we found that students who plan career-long research or academic careers place greater importance on specific goals related to the process of scholarly work and productivity. Conversely, students planning to enter highly competitive residency programs are particularly interested in outcomes of scholarly work, with an emphasis on publication. Last, we found unexpected gender differences, highlighting that men are more driven by outcome and women are more driven by mentorship.
Teaching Future Docs to Help Patients Change: An OSCE to Enhance Family Medicine Clerk Skills in Motivational Interviewing

LAUREN OSHMAN MD, MPH; SONIA OYOLA, MD

STATEMENT: Forty percent of deaths are caused by modifiable patient behaviors, yet there is a mismatch between curricular time spent on health promotion in comparison to medical treatment. Motivational interviewing (MI) is a guiding counseling style that helps people strengthen motivation and energy for behavior change. MI is well-studied and effective when provided by primary care physicians. The Family Medicine Clerkship implemented a ninety-minute interactive MI workshop in July 2014. We desired to evaluate our clerks’ MI skills through an Observed Structured Clinical Experience (OSCE).

OBJECTIVES: 1. Design and implement an OSCE for third year Family Medicine clerks evaluating the use of MI with a pre-contemplative patient, resistant to changing his/her smoking behavior and receiving advice and information about his/her smoking. 2. Evaluate the immediate impact of a workshop and OSCE on students’ skills and attitudes about MI.

DESCRIPTION: Goals of our workshop include: (1) Define the “spirit” of MI. (2) Practice open-ended questions and reflective listening (OARS skills). (3) Compare and contrast videos of good and bad patient counseling. (4) Practice behavior change counseling with a peer (“Real play”). Students receive a “MI” pocket card and importance/confidence ruler to use during clinical encounters. Students may review a gold standard video OSCE portrayed by the course instructor prior to the OSCE. Finally, students participate in a 20-minute encounter utilizing MI skills with a patient who is pre-contemplative about quitting smoking. Encounters are scored on a MI behavior checklist with five domains worth three points each and a total possible score of 15 points. The domains include: (1) agenda setting (2) OARS skills (3) giving feedback and advice (4) assessing readiness for change and (5) summary and closure. The checklist was adapted from the ONE PASS rating scale (McMaster and Resnicow) and Rubric for Core Competencies in Behavioral Medicine (Olson and Triana). Student attitudes are assessed via a self-reflection exercise completed immediately after the OSCE.

RESULTS: A total of 15 student OSCEs were analyzed (Summer 1 and Summer 2). Average score was 9.6 (SD 2) out of 15 total points, which translates to “moderate” MI skills. Each sub-category was scored from 1-3. Scores were lowest in agenda-setting (1.5, SD 0.8) and giving feedback and advice (1.7, SD 0.6). Scores were higher in OARS skills (2, SD 0.6), assessing readiness for change (2.2, SD 0.6), and summary and closure (2.1, SD 0.5). Coding of key themes from student self-reflection commentary reveals that students feel that MI is a useful tool to help patients who are not ready to change, an awareness that their counseling style can increase or decrease patient resistance, and insight that empathy and reflective listening are valuable counseling tools.

CONCLUSIONS: 1. Third year medical students are able to demonstrate moderate MI skills after a ninety minute workshop and OSCE encounter. 2. Opportunities for further training in the fourth year will help enhance MI skills and prepare physicians for the critical task of counseling patients on health behavior change.
Handoff Interrupted: Testing Auditory Distractions in a Standardized Handoff Simulation Exercise for Incoming Resident Physicians

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STATEMENT: Despite the current focus on developing handoff training curricula to improve patient safety, rigorous assessments of handoffs remain scarce. Immersive simulations allow for the evaluation of communication skills, but few specifically account for common external threats to effective handoff performance—including distractions such as ambient noise, pagers, and side conversations.

OBJECTIVES: The aim of this study was to investigate the effects of common hospital interruptions in a handoff training simulation.

DESCRIPTION: Entering PGY1 interns at the University of Chicago were required to complete a handoff simulation exercise as part of a graduate medical education (GME) orientation program. Participating interns were instructed to verbally hand off a panel of three patients to trained receivers using a standardized written sign-out document. Interns were randomized to three simulation conditions: (1) an uninterrupted handoff, (2) a handoff with routine hospital noise (70-91 dB), or (3) a handoff with hospital noise and two pager interruptions sent to the receiver. Trained receivers evaluated participants using both an evidence-based checklist of handoff best practices and a validated handoff mini-clinical examination (CEX) instrument.

RESULTS: Nearly all (125/127 [98.4%]) eligible participants completed the simulations. Out of 125 simulations, 43 (34.4%) included ambient noise only, 39/125 (31.2%) included both noise and pages, and 43/125 (34.4%) were uninterrupted. Participants receiving hospital noise only were more likely to effectively share the written sign-out document (71.1% compared to 30.2% uninterrupted and 43.6% noise/pages, p < 0.001). Interns receiving either interruption (noise with or without pages) were less likely to be heard adequately (48.8% noise and 71.8% noise/pages compared to 100.0% uninterrupted, p < 0.001). No significant differences between conditions were noted in patient prioritization, communication of “to do” items, ensuring receiver comprehension, information quantity, or averaged score. Additionally, no significant differences were found in communication skills, professionalism, or overall quality on mini-CEX evaluation, though interns receiving either interruption condition scored lower on establishing appropriate handoff settings (5.7 ± 2.3 noise and 6.2 ± 1.8 noise/pages compared to 8.0 ± 0.8 uninterrupted, p < 0.001). In handoffs with pages, most participants recovered effectively from interruptions (31/39, 82.4%) and avoided side conversations (35/38, 89.7%). On a follow-up survey administered one month later, 100/125 (80.0%) interns reported conducting better handoffs as a result of the simulation.

CONCLUSIONS: While common hospital interruptions created non-ideal circumstances for effective communication, handoff performance was similar among interns across all conditions. Interestingly, most interns were able to recover effectively from pages and avoid side conversations, and participants exposed to hospital noise used the written sign-out form more effectively. This finding underscores the importance of standardized templates and protocols in avoiding handoff errors. Going forward, further research addressing the instruction and assessment of handoff communication is recommended.
STATEMENT: There is a growing awareness of the need for flexible training options as a result of the older age of medical school applicants, the growing proportion of women in medicine, the prevalence of dual-career couples, and the priorities of the Millennial generation.

OBJECTIVES: We performed a survey analysis to determine the demand among medical students for access to part-time residency training options.

DESCRIPTION: The authors developed an 11-question survey for medical students using literature review, expert opinion and a pilot study at the University of Chicago. An electronic version of the survey was emailed to University of Chicago medical students and a paper version of the survey was distributed to a convenience sample of 227 medical students attending the American Academy of Family Physicians (AAFP) National Conference. Data collection was anonymous and no incentives were offered for completing the survey. This study received exemption from the University of Chicago IRB.

RESULTS: 69% of University of Chicago medical students completed the survey. Over half of medical students surveyed indicated that they would be interested in working part-time during some portion of their residency training, and that access to part-time training options would increase their likelihood of applying to a particular residency program. No significant difference was seen between students planning to go into different specialties. When given the option of three residency training schedules of varying lengths, 40% of male students and 62% of female students chose a 60-hour workweek even when that meant extending the residency length by 33% and reducing their yearly salary to $39,000.

CONCLUSIONS: There is considerable demand among medical students for access to part-time residency training options and reduced-hour residency programs. The high level of interest indicates that offering flexible training options could be an effective recruitment tool for residency programs and could improve student’s perception of their work-life balance during residency.
Ordering Wisely: A Resident-Led Initiative to Improve Value
MATTHEW MODES, MD; JEANNE FARNAN, MD, MHPE; VINEET ARORA, MD, MAPP

STATEMENT: Few physicians receive training on practicing high value care. Moreover, studies have shown that spending habits developed during residency training have a significant and prolonged impact on future spending habits of physicians. It is therefore critical to develop cost-conscious physicians during residency training.

OBJECTIVES: The objectives are to educate residents about impact of practice habits learned during residency on future practice patterns and provide specific areas where residents practice in a low-value manner and, through education, decrease rates of these low-value practice habits.

DESCRIPTION: In the spirit of the Choosing Wisely campaign, we identified categories of laboratory tests which were not being ordered in an evidence-based cost-conscious manner by internal medicine residents at an academic medical center. We focused specifically on inpatient thyroid studies, ANA and sub-serologies, and folate. Based on literature review, best ordering practice recommendations on each category were formulated and then reviewed and edited with respective sub-specialists for appropriateness. These sub-specialists served as faculty champions, helping garner support for and lend credibility to the recommendations. Working with the laboratory services center, we obtained estimates of baseline ordering rates of relevant laboratory tests. We also obtained chargemaster prices, Medicare reimbursement rates, and cost for each laboratory test. Subsequently, in three small groups, internal medicine residents participated in an interactive lecture introducing them to evidence from the literature, reviewing the academic medical center’s ordering patterns, and presenting our evidence-based cost-conscious ordering recommendations for each of the categories. Interactive polling was used during the lecture to engage participants and gauge baseline participant knowledge. Additionally, pocket-cards displaying the recommendations were distributed to all participants in the lecture to provide ready-at-hand reference when on the wards.

RESULTS: Results of surveys of participants using a Likert scale revealed a significant improvement in knowledge in each category of laboratory test following the lecture. Specifically, when asked to rate their knowledge level of each category before and after the lecture, the percentages of participants choosing “high” or “very high” were 33.3% vs 94.4% for inpatient thyroid studies, 25.0% vs 91.7% for ANA and sub-serologies, and 30.6% vs 97.2% for folate (p<0.0001 for all). Additionally, when asked to rate their knowledge level of “price, reimbursement, and cost” of the particular lab tests as well as the “impact of practice habits formed during GME on future spending patterns of physicians”, the percentages of participants choosing “high” or “very high” were 8.3% vs 66.7% and 19.4% vs 75.0%, respectively (p<0.0001 for both). Furthermore, 100% of participants surveyed selected “agree” or “strongly agree” when asked if the content of the lecture was relevant to their role as residents, the teaching methods were appropriate for the topic, and most importantly if they planned to change their behavior as a result of the lecture.

CONCLUSIONS: Interactive educational initiative can improve housestaff knowledge and intent to change practice habits regarding value-conscious use of common labs. Future work aims to determine if rates of ordering for these lab tests changed pre/post intervention as well as assess for sustained gains in knowledge.
A Curriculum to Optimize Medical Student Experience with Patient-Centered Discharge Care

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STATEMENT: Comprehensive patient-centered discharge care is critical but infrequently formally taught in clerkships.

OBJECTIVES: Our objective was to create a curriculum to address this gap in patient-centered discharge education.

DESCRIPTION: Based on a needs-assessment demonstrating students do not frequently provide ambulatory post-hospital follow-up nor receive supervision providing discharge care, a curriculum was created. Students participated in an interactive workshop focused on patient-centered discharge care techniques that included our teaching video of one patient’s flawed care transition and a reflective small group exercise. To promote direct observation, mobile application tools were designed for attendings and residents to observe students providing discharge care. Students were required to complete one observed discharge and encouraged to attend one post-hospital follow-up visit. For assessment, surveys were administered in the academic year before and after the curriculum.

RESULTS: Four quarters of post-workshop survey data is complete with a response rate of 75/85 (88%). 92% (69/75) of students agreed that the workshop will be “helpful in practicing effective discharge education” and 96% (72/75) agreed the video and workshop provided effective strategies to improve post-hospital care transitions. Comments about the most useful portion of the workshop included “talking over ways to improve each pitfall” and suggested areas of improvement included additional clinical scenarios or demonstrating a well-done transition. There was a pre-curriculum response rate of 84% (73/87) and a post-curriculum response rate of 77% (50/65) to date. Compared to pre-curriculum, after the curriculum more students completed a post-hospitalization telephone call (53% vs. 92%, p=<0.001), assessed medication adherence after hospitalization (19% vs. 63%, p<0.001), and saw a patient at a hospital follow-up visit (30% vs. 78%, p<0.001). More students provided discharge education more than twice per clerkship (63% vs. 86%, p=0.005) and students reported spending more time (>5 minutes) reviewing discharge materials with patients (81% vs. 96%, p=0.03). Students were more often directly observed completing discharge papers (52% vs. 77.5%, p=0.004) and at a hospital follow-up visit (20.6% vs. 44.9%, p=0.004). Students also were more likely to elicit patient’s perspective about discharge more than twice per clerkship (78% vs. 96%, p=0.006). Student satisfaction with their discharge care (32.9% to 67.4%, p=<0.001), discharge planning competency (34.3% vs. 57.1%, p=0.01), and post-hospital follow-up care competency (25.7% vs. 55%, p=0.001) improved.

CONCLUSIONS: To date our curriculum improved student participation in discharge care and direct observation of these activities. Similar to previous studies, it improved students’ satisfaction and self-reported competency. However, it also increased patient-centered discharge behaviors. This curriculum needs further evaluation but has potential to address competencies focused on patient-centeredness, system-based practice, and communication as well as the core entrustable professional activities (EPA) addressing care transitions.
Maintaining General Surgery Resident Technical Skills During Interruption in Training: Results of a Needs Analysis and Development of a Skills Maintenance Curriculum

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STATEMENT: A significant percentage of general surgery residents interrupt training in order to partake in full-time research or other enrichment opportunities. Interruption in technical skills training has been demonstrated to negatively impact confidence and may result in skill deterioration. Currently, there is no established curriculum for general surgery residents at the University of Chicago to maintain their technical skills during research time.

OBJECTIVES: We first performed a needs analysis to better understand the impact of interrupted training on resident confidence in performing technical skills. Based on our results, we designed a curriculum to maintain proficiency in technical skills during interrupted training, or if proficiency in basic skills is not demonstrated, to achieve and maintain proficiency. The curriculum objectives are as follows: Basic open and laparoscopic skills confidence and performance will be assessed upon departure from standard training. Educational strategies, including simulation, will be implemented to provide deliberate practice for residents who are not confident or proficient at any measurement time. Residents will be assessed upon return to training and will demonstrate proficiency, as well as confidence that is stable or improved from baseline.

DESCRIPTION: A needs assessment was conducted by surveying residents who interrupted their training to evaluate their confidence in a variety of technical skills. Based on this needs analysis and utilizing previously validated skills modules, we developed and began to pilot a Skills Retention Curriculum consisting of four modules: FLS, laparoscopic suturing, vascular anastomosis, and hand-sewn bowel anastomosis. At each assessment time point, residents will complete pre- and post-test confidence surveys, and undergo objective performance assessments using validated assessment methods. Assessments will be done at 3-5 month intervals, and residents will be provided the opportunity to perform deliberate practice in the interim at the Grainger Center for Simulation and Innovation.

RESULTS: Nine of twelve (75%) residents responded to our needs analysis survey (3 female and 6 male residents). Five of nine residents started research after their PGY-2 year, and 4/9 after their PGY-3. Eight residents completed 2 years of research, and 1 completed 3 years. The majority of residents had twenty-five or less operative cases during their research time (n=7). Residents found basic technical skills to be the least affected and easiest to return to baseline, including one-handed knot tying (4.33 mean on a 5-point Likert scale), simple suturing (4.56 average), and open tissue handling (3.56 mean). They found more complex tasks and laparoscopic skills to be more difficult upon return. These included laparoscopic tissue handling (mean 2.33), laparoscopic intra-corporeal knot tying (mean 2.11), open stapled bowel anastomosis (mean 2.75), hand-sewn bowel anastomosis (mean 2.0) and vascular anastomosis (mean 1.67).

CONCLUSIONS: Survey results demonstrate that residents returning from interruption in general surgery training lack confidence with skills such as laparoscopic suturing, and bowel and vascular anastomosis construction. Currently, there is no curriculum for general surgery residents to maintain these technical skills during their research time. We developed a curriculum to assess performance over time with the goal of maintaining proficiency as well as increasing confidence upon return to clinical duties.
STATEMENT: Do evaluators of personal statements for an orthopaedic surgery residency program agree about the quality of the statements?

OBJECTIVES: The objective of this project was to quantify the agreement between evaluators about the quality of the personal statements.

DESCRIPTION: 100 randomly chosen applications to a university-based orthopaedic residency program were utilized in this investigation. For each year, 8 applications were from applicants interviewed and 12 from applicants not interviewed. The personal statement and objective data were abstracted from each application. All personal information, as well as the year in which the application was submitted, was removed from the abstracted materials. The materials were sent to 11 experienced orthopaedic surgeon evaluators. Personal statements and objective data were separated, preventing matching a personal statement to an objective data set. Evaluators were asked to rate, using a five-point Likert scale, each objective data set or personal statement by responding to the statements: “Based on Objective Data X, I would offer this applicant an interview”; “Based on Personal Statement X, I would offer this applicant an interview”; and “Personal Statement X is well written and eloquent.” Scores ranged from 1 (highly unlikely to offer an interview) to 5 (highly likely to offer an interview). Intraclass correlation coefficients (ICCs) were calculated for each of the three statements.

RESULTS: For objective data, interviewed applicants scored significantly higher than non-interviewed applicants (3.8 ± 1.0 vs. 2.8 ± 1.3, p<0.01). When assessing the personal statement for ‘likelihood to interview’, there was no difference in ratings between interviewed and non-interviewed applicants (3.42 ± 0.9 vs. 3.34 ± 1.0, p=0.25); there was, however, a difference in ratings for ‘well written’ (3.48 ± 0.9 vs. 3.34 ± 0.9, p=0.02). Evaluators had nearly perfect interobserver agreement in evaluating objective data (mean ICC 0.943, 95% CI: 0.921-0.959). Agreement was lower in the evaluation of personal statements, with a mean ICC of 0.620 (95% CI: 0.500-0.743) for ‘likelihood to interview’ and a mean ICC of 0.650 (95% CI: 0.540-0.743) for ‘well written’. A substantial percentage of applications had a wide range of ratings. For objective data, 58% of applications had a range of at least four between the highest and lowest observer ratings. For the personal statements, the ranges were even higher, with 74% and 66% having a range of at least four for ‘likelihood to interview’ and ‘well written’, respectively.

CONCLUSIONS: Evaluators assessing objective application data exhibit high interobserver reliability on which applicants to interview; additionally, evaluator ratings differentiate between those applicants who actually were and were not interviewed. Evaluators assessing applicant personal statements exhibit much lower – but still strong – reliability on which applicants to interview, but evaluator ratings cannot discriminate between those applicants who actually were and were not interviewed. For both objective and personal statement data, evaluator ratings spanned at least 4 points (on a 5-point scale) in more than 50% of cases. Programs should be aware of the wide range of observer ratings in assessing application data, and should consider having several evaluators review each application to help mitigate this effect.
STATEMENT: To date no one has characterized the subinternship experience of fourth year medical students applying into orthopaedic surgery. Our study looked to provide an initial characterization of this.

OBJECTIVES: The objectives of this study were: to identify how many orthopaedic surgery subinternships (sub-I’s) fourth year medical students perform, to identify what subspecialties they rotate on, and to identify what makes up the curricula of these sub-I’s.

DESCRIPTION: An online survey was sent after Match Day in March 2015 to all 861 applicants to a university-based orthopaedic residency program for the 2014-2015 application cycle. Applicants provided information about their educational experiences on up to four sub-I’s they had completed during that academic year.

RESULTS: Eighty-six applicants (10%) who responded to the survey constituted the study group. They completed 248 sub-I’s at 105 different residency programs (65% of all residency programs). Fifty-seven percent of applicants matched at a program where they completed a sub-I. Eighty-eight percent of applicants completed 3 or more sub-I’s, and 40% of sub-I’s involved rotating on 3 or more subspecialties. The specialties most frequently rotated on were trauma (62%), adult reconstruction (42%), and sports medicine (32.5%). Students were provided a set curriculum at 54% of sub-I’s and set goals and objectives at 56%, but a set reading list at only 19%. During 22% of sub-I’s, students report no experiences discussing patient care with attendings, and during 10.98% of sub-I’s, students report no opportunities to discuss patient care with residents or faculty. Teaching conferences were offered specifically for medical students in 26% of sub-I’s. Students took at least 4 nights of call in 72% of sub-I’s. Feedback was informal in 79% of sub-I’s and formal in 20%.

CONCLUSIONS: The medical student experience on subinternships across residency programs is far from consistent, with the greatest variability in the number of subspecialties rotated on, the presence of a formal curriculum, opportunities to discuss patient care with attendings, and the availability of formal feedback. Greater discussion about the structure and content of the subinternship could improve senior medical student education and may also improve the knowledge and skill of the student at the time he/she begins the PGY-1 year. Better prepared PGY-1 residents could benefit both training programs and orthopaedic residents.
Building Resilient Teams: Development of a Leadership Curriculum for Senior Residents

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STATEMENT: Building resilience is one promising method to help mitigate professional burnout, which is unfortunately experienced by many physicians, including trainees. Few curricula focused on increasing resiliency in trainees exist. Resilience skills may be particularly useful for trainees after difficult clinical events. This project includes a resiliency needs assessment and development of a curriculum to help residents become effective leaders and promote team resilience after difficult clinical events.

OBJECTIVES: Our objectives were to complete a needs assessment of residents’ experiences with difficult clinical events, create a workshop on building resilience as a team leader, and create a tool for reflection after difficult clinical events and allow residents to practice team-based reflection.

DESCRIPTION: We completed a needs assessment of senior residents to assess the following: 1) residents’ current methods of reflection after difficult clinical events, 2) residents’ experiences with difficult events and perceived impact on well-being, 3) desire for team reflection after difficult events, and 4) baseline resiliency scores. We are creating modules for the 2015-2016 resident ambulatory curriculum. The first module includes a review of resilience skills and a workshop on building resilience as a team leader. The second module includes a discussion of residents’ experiences with difficult events, introduces a framework for team-based reflection, and allows for small group leadership practice.

RESULTS: A total of 41/62 (66.1%) of categorical Internal Medicine residents completed the needs assessment. Over the past six months, 51.2% of residents reported experiencing difficult clinical events several times a month, 24.4% of residents several times a week, and 9.8% of residents daily. After these events, 22.0% of residents prefer to discuss with their team immediately, 56.0% later that same day, 19.6% in following days to weeks, and only 2.4% prefer not to discuss. Residents individually reflected on these events very often (41.5%), often (29.2%), or sometimes (19.5%), whereas only 9.8% reflected rarely. Residents reported talking with interns and students very often (17.1%), often (39.0%), or sometimes (39.0%), but most reported talking with attendings only rarely (41.5%) or sometimes (41.5%). Only 14.6% of residents reported talking with attendings often, and 2.4% very often. All residents reported at least some stress after unanticipated patient deaths, systems issues, poor team dynamics, and medical errors, and 68.3% of residents think difficult events affect their well-being at work. Additionally, 58.6% of residents want more training to help their team cope after difficult events.

CONCLUSIONS: Internal Medicine residents report experiencing difficult clinical events regularly, with 85.4% experiencing at least several times a month. Most residents find these events stressful and prefer to discuss with their teams. While the majority of residents discuss these events with interns and students, they report infrequently discussing with attendings. Although residents are leading these team conversations, they have not received training in this area and would like more. We have created a curriculum to teach senior residents leadership skills and a framework for team based reflection after difficult clinical events to promote team resiliency.
STATEMENT: With recent changes in the clinical environment such as resident work hour restrictions, emphasis on surgeon efficiency, outcomes and mitigating medical errors, as well as increasing complexity of surgical patients, residents have limited opportunities for learning surgical skill and deliberate practice. As a result, residents do not develop an appropriate and consistent set of surgical skills by the end of the intern year. ACGME and individual programs increased their focus to develop improved instruction and skill assessment tools for surgical residents. However, existing intern skills curricula are very often implemented over a short time period and focus on limited aspects of surgical skill acquisition.

OBJECTIVES: Our main goal is the development and implementation of a comprehensive Intern Surgical Skills Curriculum combining technical knowledge and proficiency, distributed over the entire year to promote longitudinal growth, utilizing multiple teaching strategies, and focusing on individual resident needs with emphasis on continuous feedback.

DESCRIPTION: Based on the needs assessment of surgical residents we developed and implemented a pilot Intern Surgical Skills Curriculum over the past four years. What makes our design innovative is the temporal distribution of the curriculum, its regimented nature, individualized approach, and continuous constructive feedback. Our curriculum content consists of 10 sessions, each with a narrow surgical topic that corresponds to a specific objective. These monthly meetings feature a lecture on a given topic and demonstration of a skill by an expert. Monthly homework assignments foster deliberate practice, while monthly quizzes and video performance reviews encourage content learning and provide feedback on progress. A safe and supportive learning environment with collaboration among residents is encouraged.

RESULTS: The resident interest in the curriculum was 100%. Based on a survey, residents reported increased confidence in surgical skill and knowledge imparted by the curriculum and all found a moderate to large impact of the curriculum on their perceived skill level. Also, the average technical knowledge assessment test scores increased by 60% between beginning and end of intern year. Comparing resident participants to non-participants, the curriculum made a striking impact on the resident satisfaction with skills training and confidence in the operating room. To determine the curriculum’s efficacy, we designed a three-armed prospective study comparing this curriculum with self-directed study and no intervention. Manual skill and written knowledge assessments will be performed at the beginning and end of the intern year for all three groups. Surgical Training and Assessment Tool will be used to provide residents’ self-assessments and attending surgeon feedback. Also, self-assessment questionnaire will be given at the end of second year of residency to determine lasting effects of the curriculum.

CONCLUSIONS: What makes the Intern Surgical Skills Curriculum innovative is its temporal distribution over the entire intern year, regimented nature with strong emphasis on graded homework assignments, and assessment of surgical knowledge along with skill. Our ultimate goal is to determine the standard for improving surgical intern performance in a meaningful and durable manner. We plan to expand the curriculum to subspecialty interns and potentially subsequent years of residency.
Building Human Infrastructure: Physician ECMO Credentialing at Comer Children’s Hospital

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STATEMENT: Prior to 2014, Comer Children’s Hospital did not have a formal Extracorporeal Membrane Oxygenation (ECMO) credentialing process despite being an active ECMO center. ECMO management was based upon the clinical experience of attending physicians, including surgeons and intensivists. Though each individual is an expert in their respective fields, standardization of ECMO management across neonatal and pediatric patients was needed to optimize care.

OBJECTIVES: We aimed to develop a formalized educational process to credential all ECMO physician providers based upon the Extracorporeal Life Support Organization (ELSO) guidelines. By creating a structured credentialing process, we also aim to achieve standardization of care across the various pediatric specialties when caring for ECMO patients.

DESCRIPTION: We developed a curriculum centered around ECMO Boot Camp, a two-day, multidisciplinary course based on ELSO guidelines. The didactic portion featured lectures from our local experts and hands-on simulation sessions that reviewed ECMO emergencies. Minimum clinical experience, further simulation sessions, and an online exam was also added to complete physician credentialing.

RESULTS: The first annual ECMO Boot Camp was held in December 2014. There were 71 participants, including physicians, nurse practitioners, nurses, respiratory therapists, and perfusionists. Of these, 25 were physicians from the Neonatal Intensive Care Unit (NICU), Pediatric Intensive Care Unit (PICU), Cardiothoracic Surgery, and Pediatric Surgery. Between the NICU, PICU, Pediatric Surgery, and Cardiothoracic Surgery Departments, there are a total of 55 fellows and attending physicians who are eligible to be credentialed as ECMO caregivers. Most of the 25 physicians who completed ECMO Boot Camp remain in the credentialing process.

CONCLUSIONS: Challenges were faced while implementing this process at our institution. The introduction of all new centrifugal pumps delayed simulation training significantly. Also, a decrease in ECMO cases over the past eight months has slowed clinical experience opportunities. Finally, we continue to battle with the cultural shift from experience-based “credentialing” to our new structured credentialing program with minimum requirements. Credentialing of eligible physicians is currently underway as the new centrifugal pump in-service and simulation program is nearly complete. The expected completion for credentialing of all 55 eligible fellows and attending physicians is by June 2016. We are also working towards mandating the physician ECMO credentialing process for all incoming fellows at our institution through garnering buy-in from the NICU, PICU, Pediatric Surgery and ECMO program directors.
Starting on Day 1: An Interactive Role Play for Incoming Interns on the Importance of Interprofessional Practice

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STATEMENT: The goal of the Accreditation Council for Graduate Medical Education (ACGME) clinical learning environment review (CLER) program is to optimize the clinical learning environment for trainees, including improving interprofessional practice. It is unclear how to best prepare interns for interprofessional practice. A prior needs assessment of residents and staff nurses at the University of Chicago on this topic highlighted the importance of “orienting interns from day 1” to the importance of these skills.

OBJECTIVES: This study describes the development, implementation, and evaluation of an interprofessional interactive role play for incoming interns during Graduate Medical Education (GME) Orientation.

DESCRIPTION: Incoming interns from all specialties were required to participate in this exercise during New Intern Orientation. Interns were divided into groups of 10 to participate in a 30-minute interprofessional three-character role-play (nurse, intern, patient) and subsequent discussion with nurse and physician facilitators. The role-play highlighted the difficulty communicating surrounding the potential discharge of a patient. An interprofessional team of educators developed the case, facilitator guide, and discussion checklist. All participants and facilitators were surveyed post-exercise and participants again 30 days into internship. Descriptive statistics were used to summarize the data.

RESULTS: Of the 32 interprofessional facilitators, half (16) were nurses and half (16) were physicians. All facilitators found the role-play simulation to portray a realistic scenario, were satisfied with the discussion, and felt their opinions were valued. Of the 133 incoming interns surveyed, nearly all (91%, 121) reported receiving prior IPE training, and three-quarters (76%, 101) were satisfied with their training. Over three-quarters (84%, 112) felt the role-play scenario was realistic. Most (86%, 114) interns were satisfied with their performance, and nearly all (94%, 125) were satisfied with the post-case discussion. Almost all (93%, 124) interns reported they would be more thoughtful of how they interact with health professionals. Qualitative comments from participants included: “I enjoyed having nurses and physicians represented,” “loved including nurses,” “This was a great way to open up discussion with attendings, new interns, and nurses,” “very useful- favorite thing from orientation so far,” “the attending and nurse were great and made the session very interesting,” and “would love to have more representation of other groups like PT, nutrition.” Thirty days into internship, 128 interns were re-surveyed and over half (52%, 69) reported that they were communicating more effectively with interprofessional team members as a result of the role play.

CONCLUSIONS: In this first rendition of an interprofessional interactive role play for incoming interns, satisfaction of interns and physician and nursing facilitators was very high. Nurse facilitators felt their opinions were valued, which was supported by robust qualitative comments from interns. Over half of interns reported this exercise improved their ability to effectively communicate with interprofessional team members during internship. Although the actual impact on patient care of this short exercise is unclear, the return on investment to GME is high with high learner and facilitator satisfaction and high levels of commitment to change. Future work should reinforce these skills as well as ascertain whether this exercise results in improved interprofessional communication.
Developing an Interprofessional Collaborative Practice Curriculum for Residents: A Needs Assessment

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STATEMENT: In our current climate of health care reform, primary care is increasingly delivered by interprofessional teams with the aim to improve quality and value. Prior studies have shown that highly functioning interprofessional teams improve both patient satisfaction and patient outcomes; they also improve employee satisfaction and retention. Thus, it is essential for physicians to learn the foundational skills to work within and lead interprofessional teams. Studies demonstrate that physicians’ early clinical experiences have transformative potential for how physicians work collaboratively with nursing staff throughout their careers. Formal physician training in interprofessional collaboration has traditionally been limited, thus prompting the Liaison Committee on Medical Education (LCME) and Accreditation Council for Graduate Medical Education (ACGME) to integrate interprofessional education as a core competency.

OBJECTIVES: Our objectives were to examine the need for a curriculum in interprofessional collaborative practice (IPCP) for University of Chicago Internal Medicine (IM) and Internal Medicine-Pediatrics (MP) residents in the primary care setting, and to describe the knowledge, skills, and attitudes toward IPCP of incoming interns to the IM and MP Programs.

DESCRIPTION: A needs assessment was conducted regarding interprofessional education and collaborative practice within the primary care clinic. The targeted needs assessment began with discussions with key stakeholders, including residency leadership, clinical administrators, residents, and staff. Based on these discussions, the focus for the first year resident curriculum was placed on collaboration between physicians and nursing staff, including clinic medical assistants (MA), licensed practicing nurses (LPN) and registered nurses (RN). The formal needs assessment included a questionnaire completed by IM and MP interns to inform curriculum development. The survey included questions looking at case-based knowledge assessment, skills as perceived by the resident, and attitudes toward IPCP using a previously validated scale - Attitudes Toward Health Care Teams Scale. Questions were developed based on the Interprofessional Education Collaborative’s ‘Competencies for Interprofessional Collaborative Practice’.

RESULTS: The response rate for the IM and MP intern survey was 91% (n=43). 65% of incoming interns had formal IPE in medical school. Settings of these experiences were variable, including lectures, small group seminars, simulations, clinical rounds, and volunteer experiences. For the case-based knowledge assessment, 65% of residents with formal IPE correctly answered clinical questions compared to 40% of residents without formal IPE (p=0.11). Additionally, 79% of residents agreed or strongly agreed that they would like further training in interprofessional collaboration. Our literature review and preliminary data have identified key areas for the curriculum, including understanding of roles and effective communication and feedback.

CONCLUSIONS: Our results indicate there is a need for further IPE for residents in the primary care clinic. Incoming IM and MP interns have had variable experiences with IPE but are eager to learn more about interprofessional collaboration. Based on the needs assessment, we will evaluate whether a novel approach of having nursing staff as educators about IPCP will improve residents’ knowledge, skills, and attitudes toward IPE. The pilot year is ongoing this academic year and has potential to improve the way interprofessional practice is taught within medical training.
Physicians’ Perceptions of Psychiatric Care Delivered in General Medical Settings: A Targeted Needs Assessment

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STATEMENT: The intersection of psychiatric and general medical care is an important and problematic area. The majority of patients with psychiatric conditions are treated for those conditions by a general medicine physician, but such care has been found to be less effective than treatment by a psychiatric specialist. Additionally, patients are more likely to see a primary care physician than a psychiatrist in an average year, making primary care physicians the front line of assessing and treating psychiatric conditions.

Given these factors, and given the 18.6% prevalence of mental illness in the United States, there is a need to provide targeted education for primary care physicians in how to treat patients with mental illnesses.

OBJECTIVES: To perform a needs assessment among practitioners in primary care and psychiatry, in order to guide future attempts to improve curricular development and care in this area.

DESCRIPTION: A national sample of internists and psychiatrists were surveyed. The surveys focused on physicians’ perceptions of the role of internal medicine physicians in the treatment and assessment of patients’ psychiatric conditions; physicians’ perceptions of current knowledge gaps regarding that treatment; and physicians’ assessments of what changes they would like to see in how internal medicine practitioners are prepared to treat patients with psychiatric conditions.

RESULTS: Internists reported being least comfortable with treating patients with psychotic disorders (86% of respondents), eating disorders (72%), attention/learning disorders and personality disorders (59% each). Psychiatrists reported perceiving internists as least effective at treating patients with personality disorders (93%), bipolar disorder (60%), and substance use and psychotic disorders (40% each). 53% of psychiatrists surveyed reported that internists needed additional information on medication management and titration, with a focus on sufficient dosage.

CONCLUSIONS: Physicians’ perceptions of gaps in current care suggest a direction for future CME for internists regarding the treatment of patients with psychiatric conditions. Future CME could instruct internists on current best practices in medication prescribing and titration; it could address and dispel misconceptions or concerns about titrating psychotropic medications to therapeutic doses; it could provide strategies for how to best recognize and/or provide care for patients with psychotic disorders or personality disorders. These results provide the beginning of a roadmap to specific areas that could be addressed in order to better the overall standard of general medical care for patients with psychiatric conditions.
The Fourth-Year Interface: A Self-Reflective Tool for Competency-Directed Education in the Fourth Year

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STATEMENT: Fourth year medical students (MS4s) require innovative tools to structure their final year of undergraduate medical education as a meaningful transition to post-graduate training in the context of the competency-based guidelines outlined by the American Association of Medical Colleges (AAMC).

OBJECTIVES: To encourage MS4s to develop their own competency-directed fourth-year curricula with self-awareness of the skills and experiences they will need to transition to residency.

DESCRIPTION: We developed a web-based tool, the Fourth-Year Interface (FYI), which facilitates access to the medical school's registration system to guide MS4’s in curricular planning. FYI indexes courses according to the density of content representing the individual competencies. It is made available to students in spring of their third year and allows MS4s to build their schedule, track fulfillment of graduation requirements such as completion of licensing exams, and tabulate the competency representations of each student's courses. Retrospective data from FYI's logs enables analysis of overall utilization, patterns of usage and changes to competency totals as the year progresses.

RESULTS: FYI was used almost universally by the first three years of classes, with 91.2% (248/272) of graduating seniors accessing FYI at least once. FYI reaches peak usage in the first month after opening, with 89.4% of MS4s making changes to their FYI schedules. In the first six months of availability, an average of 41.5% of MS4s continue actively using FYI (averaged across three years). Of the 248 students who ever used FYI, 77.4% of students returned to use FYI again. Three years after launching, FYI demonstrates sustainable usage across three classes. Analysis of retrospective data of FYI's logs demonstrates three distinct patterns of heavy, average, and low usage; nevertheless, despite these deviations the majority of students arrive at highly similar balances between the competencies by the end of fourth year.

CONCLUSIONS: FYI is highly utilized at our institution. However, without specific attention drawn to the competency indices, students do not develop their fourth-year schedules according to competency fulfillment. They are most likely using FYI to schedule and monitor fulfillment of explicit graduation requirements. The high utilization of FYI at our institution demonstrates fulfillment of a need among MS4s for tools to guide self-directed learning during the final year of medical school. However, in order to encourage the use of competency-directed education, more explicit attention to the AAMC competencies may be necessary. Nevertheless, rather than impose more stringent requirements, innovative mechanisms such as FYI may encourage students to develop their fourth year meaningfully in preparation for residency with self-reflection and self-motivation.
“I Just Want My Doctor’s Undivided Attention”: 
Patient Perceptions of the Impact of EMR Use on Communication”

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STATEMENT: The use of the Electronic Medical Record (EMR) in exam rooms can impede the doctor-patient relationship. Little research to date has explored patient perceptions of provider EMR use and the impact on communication. Despite widespread EMR use, few curricula teach providers how to use the EMR to enhance communication with patients.

OBJECTIVES: The aims of our study are to identify patients’ perceptions of EMR use and elicit their suggestions to inform development of a patient-centered EMR use curriculum.

DESCRIPTION: Patients seen by internal medicine attendings and residents at the University of Chicago’s primary care clinic were randomly selected for our study. One year after EMR implementation, trained research assistants conducted structured telephone interviews with patients using critical incident technique and appreciative inquiry to elicit their positive and negative perceptions of EMR use by physicians. Using constant comparative analysis, three investigators independently coded 10% of the transcripts to develop the coding library. An additional 10% of the transcripts were coded to establish inter-rater reliability. The coding library was applied to the remainder of the transcripts for analysis using ATLAS.ti software.

RESULTS: Of the 384 patients selected, 12 were excluded due to disability, language barriers, or death. Of the 372 eligible patients, 108 telephone interviews were completed. The interviews revealed two overarching themes: (1) Clinical functions of EMR, and (2) Communication functions of EMR. Six sub-themes were identified: (1) Documentation functions of the EMR (2) Clinical workflow functions of EMR (3) EMR as educational resource (4) Information access, (5) Facilitate engagement and (6) Physical focus. We have analyzed 100% (108/108) of the transcripts. Overall, 85% (991/1167) of codes reflected positive perceptions the EMR, the majority being “Clinical functions” and “Clinical workflow Functions of EMR” sub-themes (i.e. “increases clinical efficiency” and “promotes teamwork and communication between doctors”). For example one patient said “they can see all the other doctors’ notes... they really work together as a team. I love it!” Fifteen percent (175/1167) of the codes represented negative perceptions. Of these, 45% (71/175) of negative codes fell under “Physical focus” sub-theme (i.e. “poor eye contact” and “unbalanced focus”). For example one patient stated “how can you focus on the patient if you’re looking somewhere else it gets in the way.”

CONCLUSIONS: Patients have both positive and negative perceptions of EMR use. Positive perceptions centered on improving clinical efficiency by promoting efficient note writing and teamwork between providers. Negative perceptions focused on poor communication skills related to EMR use (e.g. eye contact, unbalanced focus). Interestingly, many patients who identified the EMR as a barrier to communication also acknowledged that it was useful in increasing clinical efficiency. By interviewing patients, we gained unique insights into their perceptions of EMR use. We will use our findings to inform a patient-centered EMR use curriculum to teach providers how to use the EMR to enhance communication with patients.
STATEMENT: Use of the electronic medical record (EMR) in exam rooms can impede patient-doctor communication and negatively impact the doctor-patient relationship. At academic medical centers, trainees rely on the hidden curriculum to learn strategies for EMR integration by observing faculty in their clinical practice. Despite rapid EMR adoption, few faculty providers receive formal training on how to incorporate patient-centered communication strategies while managing demands of the EMR.

OBJECTIVES: We aim to train faculty at the University of Chicago on patient-centered EMR use and survey patients to assess the impact of our training.

DESCRIPTION: After reviewing the literature, we developed a 90-minute patient-centered EMR use training targeting General Internal Medicine (GIM) faculty, and a 12 item Likert scale patient survey to assess faculty performance. Five faculty members were randomly selected to be directly observed in clinic pre and post intervention and received a formal debriefing. Two months after the workshop, we surveyed patients seen by trained faculty. The following is a sample question from the survey: ‘During my clinic visit today, my doctor used the computer to educate me on my medical conditions or treatment.’ Likert responses at the high end of the scale were grouped to dichotomize data (i.e. 4=agree and 5=strongly agree were simply categorized as “agree”). Descriptive statistics were summarized and we compared results from faculty who participated in the additional direct observation with those who did not.

RESULTS: Nineteen GIM faculty members participated in the training. Seventy-six patient surveys were analyzed and patients from all 19 providers were included. The majority [81% (57/70)] of respondents were female and the mean age was 59 (18-91 yo); 56% (38/68) were African American and 32% (22/68) were Caucasian. Almost all patients agreed that their doctors ‘started the visit technology free and asked about my concerns,’ ‘positioned herself so that we could talk face to face,’ and ‘maintained good eye contact during the visit’ [99% (75/76), 99% (75/76), 96% (73/76) respectively]. While 87% (66/76) of patients agreed that their doctor ‘ensured the computer was set up so I could see the computer and physician at the same time,’ only 82% (61/74) reported their doctors ‘explained what she was doing on the computer.’ Only 71% (53/75) agreed that their doctors ‘encouraged me to interact with the computer (i.e. to review results).’ Only 69% of patients agreed that their doctors ‘logged off the computer at the end of the visit,’ and interestingly 23% (17/73) were unsure if their providers did so. Overall, 63% (50/73) agreed that compared to 6 months ago, ‘today my doctor used the computer more effectively to communicate with me’ and 77% (58/75) agreed that ‘I am more satisfied with how my doctor uses the computer to communicate with me.’ When comparing patient surveys from 5 faculty (n=22) who participated in the direct observation to the remaining 14 faculty (n=54), there was no significant difference in mean ratings on the 12 items measured (p>0.05 for all).

CONCLUSIONS: A short faculty training on patient-centered EMR use could be associated with increased patient satisfaction with EMR-related communication. Best practices on patient-centered EMR use can be taught and positive objective behaviors (i.e. screen sharing and good eye contact) were reported by patients post training. Physician training should be expanded to include other providers and incorporated into existing EMR training at academic institutions.
Implementing a Resident Acute Care Surgery Service: Improving Resident Education and Patient Care

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STATEMENT: The American Board of Surgery recently changed the requirements for graduating surgery residents to a minimum of 25 cases as a teaching assistant (TA). To expand the resident education experience and allow for senior residents to be more autonomous in the management of patients both in the operating room and perioperatively, our program implemented a new Resident-run Acute Care Surgery (RACS) consult service.

OBJECTIVES: We hypothesized that creation of this service would increase TA cases and resident satisfaction, as well as be more efficient in evaluating consults.

DESCRIPTION: With the implementation of RACS, we switched from an attending-service based call model to a new admitting service that was mainly resident run with alternating attending supervision. Two residents (PGY4 or 5 and PGY2) staffed this service and all new surgical consults were directed to RACS. When appropriate based on resident experience and case complexity, the operative case was done as a TA case with the senior resident taking the junior resident through the case and the attending in the room. We collected information on TA case logs for senior residents pre (n=10) and post (n=11) implementation of the RACS service, independency data on the proportion of each case performed independently by residents, resident evaluations of general surgery services, and consult time (time from consultation to time patient seen) for the first 12 months of the service (June 2014-June 2015).

RESULTS: The number of total TA cases logged among graduating chief residents increased from a mean of 13.4 ± 13.0 (range 4-44) for pre-RACS residents to 30.8 ± 8.8 (range 27-36) for post-RACS residents (p<0.01). This increase was seen with a mean of one month spent on RACS for the post-RACS residents. Of 323 operative cases, the residents performed an average of 82% of the case independently. On resident service evaluations of RACS (n=27) compared to other general surgery services (n=127), there was a significant increase in the satisfaction with the variety of cases (mean 5.08 vs 4.52, p<0.01 on a 1-6 Likert scale) and complexity of cases (mean 5.35 vs 4.94, p<0.01). In addition, creation of a one-team consult service resulted in a more streamlined consult process, with average consult time of 22 minutes for operative consults and 25min for non-operative consults.

CONCLUSIONS: The implementation of a RACS service has increased resident autonomy, TA cases, and satisfaction with operative case variety, as well as increased the efficiency of surgical consultation at our institution.
Challenges to Rounds: A Qualitative Study

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STATEMENT: There is a relative paucity of studies addressing the perceptions of different medical training levels about the challenges they face on today’s inpatient rounds.

OBJECTIVES: The objectives of this study were to (1) identify challenges faced by medical students, residents and attendings in internal medicine and pediatrics during inpatient rounds, and (2) compare and contrast challenges by training level and specialty.

DESCRIPTION: This is a secondary analysis of a multi-institutional qualitative study of the purpose of rounds, using focus groups of medical students, interns, senior residents, and hospitalists in internal medicine and pediatrics at four national sites. The comments analyzed reflected the problem with rounds rather than answering the original questions asked. The constant-comparative method was used to identify themes and codes.

RESULTS: Thirty-one medical students, forty-six interns, thirty-nine senior residents, and forty-eight attendings participated in a total of twenty-one focus groups. The authors categorized responses into four major themes: Problems with How Rounds Are Run, Challenges to Teaching and Observing, External Problems, and Problems Specific to Family-Centered Rounds (FCR). Problems with How Rounds Are Run encompassed all references to challenges that exist on rounds stemming from improper or unsatisfactory facilitation during rounds by team leaders. Codes included variation in rounds by attending or resident leader, problems with presentations, and poorly-defined roles and expectations. Challenges to Teaching and Observing included learner or teacher-defined challenges to the education or observation of participants on rounds. Codes included tensions between education and service, decreased learning on rounds, and decreased physical exam instruction. External Problems encapsulated comments related to systemic challenges to rounds that are beyond facilitator control. Codes included time pressures, problems with technology, and transitions of care. Problems Specific to FCR emerged exclusively from medical student and pediatrics focus groups. Challenges unique to the adoption of FCR in pediatrics hospitals were grouped within this theme. Codes included loss of complexity in rounds discussions, FCR not being helpful for patients and families, and clinical language barriers.

CONCLUSIONS: Students, residents, and attendings in internal medicine and pediatrics identified Problems with How Rounds Are Run, Challenges to Teaching and Observing, and External Problems as challenges to successful rounds. Though several systems-level problems emerged that exist beyond the control of participants on rounds, such as time pressures, transitions of care, and duty hours restrictions, many of the identified challenges to rounds remain actionable. Problems with How Rounds Are Run suggest a role for greater faculty development in the realm of bedside teaching best practices, especially defining roles and establishing expectations for presentations. Similarly, increased teaching efficiency through adoption of strategies like one-minute preceptor can overcome some of the tensions grouped into Challenges to Teaching and Observing, and thereby maintain the educational value of modern rounds. The adoption of novel rounding models, e.g. Family-Centered Rounds at pediatrics hospitals, introduces tensions between new stakeholders on rounds and members of the medical team, adding obstacles to the attainment of the goals of rounds.
The Impact of Scholarship & Discovery on Student Interest in Career-Long Research: A Longitudinal Study

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STATEMENT: Concerns remain regarding the future of the physician-scientist workforce. One implicit goal of scholarly concentration (SC) programs is to give students the skills and motivation to pursue career-long scholarly work. SC variables that impact students’ career plans have not been well-described.

OBJECTIVES: Use longitudinal data collected from Pritzker School of Medicine students to determine the impact of the Scholarship & Discovery (S&D) program on career plans.

DESCRIPTION: De-identified data from the graduating classes of 2014 and 2015 were studied, taken from MS1 Intake Assessments, MS2 Block Evaluations, and MS4 Reflections. At each survey, students indicated interest in career-long research using a question derived from the AAMC Graduation Questionnaire. Responses on a 5-point Likert scale described the extent of projected career-long research involvement, ranging from exclusively involved, to no involvement at all. Change scores were generated to define change in interest in a research career. Fourth year students were also asked to rate their overall satisfaction with the S&D program on a 5-point Likert scale, in addition to reporting whether they disseminated their scholarly work. Ordinal logistic regression, controlling for baseline interest in a research career, was used to determine whether higher overall satisfaction with S&D and dissemination were associated with increased interest in a research career from MS1 to MS4. Data were analyzed using STATA 14 (College Station, TX) with p<0.05 deemed statistically significant.

RESULTS: One hundred twenty five students (63 men and 62 women) completed all three surveys, indicating full participation in the S&D curriculum. At matriculation, 1 student (0.8%) intended a career exclusively in research, 51 (40.8%) intended significant involvement in research, 48 (38.4%) intended to be somewhat involved, 24 (19.2%) intended limited research involvement, and 1 (0.8%) predicted no research involvement. At graduation, 29 students (23.2%) intended significant research involvement, 75 (60%) intended to be somewhat involved, 19 (15.2%) expected limited involvement, and 2 (1.6%) expected no involvement. Most students were satisfied (46.4%) or very satisfied (35.2%) with S&D at graduation. 65 students (52%) authored or co-authored a publication. When controlling for baseline interest in career research, a one-point higher level in overall satisfaction with S&D was associated with a 2.03 (95% CI 1.28-3.23 , p=0.003) greater proportional odds of an increased interest in a research career from MS1 to MS4. After controlling for overall satisfaction and baseline interest, publication was independently associated with a greater proportional odds of an increased interest in a research career 2.35 (95% CI 1.11-4.99) p<0.001). There was no interaction between publication and overall satisfaction with S&D.

CONCLUSIONS: Ours is the first quantitative longitudinal study describing the impact of an SC program on change in career plans during the course of medical school. Overall satisfaction and publication were independently associated with increased intent to participate in career-long research. Given these associations, two ways to improve the physician-scientist workforce are to boost satisfaction with existing SC programs and formally support students to publish their work. Future work to track outcomes of SC program graduates is warranted.
STATEMENT: Noon conferences have historically been lecture-based, a largely passive mode of instruction. Instructional methods which promote active learning have been shown to improve knowledge retention, facilitate feedback, and motivate learners. Team-based learning (TBL) fosters active learning and has been successfully applied to undergraduate medical education. There are less than 10 studies examining the application of TBL in residency training and no reports of the use of TBL for instruction in pediatrics residency.

OBJECTIVES: Our objectives were to adapt TBL for use in one-hour pediatrics noon conferences and evaluate feasibility, learner satisfaction, and knowledge acquisition in a TBL noon conference series.

DESCRIPTION: Three TBL sessions were presented in place of lectures during noon conferences in a pediatrics residency program. The traditional TBL structure was utilized with three components: pre-class work, individual and group readiness assessment tests, and application exercises. A pre-/post- static group design was used to evaluate learner satisfaction, engagement, and knowledge gains. Additional data was collected about facilitator preparation, session attendance, and readiness assurance test scores.

RESULTS: Pediatric residents and medical students rotating through pediatrics participated in the TBL noon conference series. Attendance ranged from 29-33 participants at each session, with 47 unique participants. Prior to the introductory session, the majority of participants (55%, n=29) were not familiar with TBL. At the end of the three sessions, 65% (n=27) of residents and students reported satisfaction with TBL. When compared to traditional didactic-based noon conferences, 76% (n=26) of participants reported they were more engaged in TBL-based conferences and 48% (n=27) reported they learned more in TBL-based conferences. Challenges to the use of TBL in noon conferences included low completion rates of assigned pre-reading and limited time for each session.

CONCLUSIONS: TBL is an effective instructional method for residents and students during pediatrics noon conferences. The use of TBL during noon conference increases learner satisfaction and learner engagement in conferences. It is feasible to implement TBL in one-hour noon conferences, but adaptations may be necessary to overcome time limitations and facilitate assignment completion. Further study is needed to examine the potential team-building capacity of TBL for resident teams.
STATEMENT: Effective medical education depends on student exposure to a wide variety of clinical scenarios, especially during the clerkship years. Medical students may not be exposed to the full range of patient interactions necessary for comprehensive education and for licensing purposes. Computer-based interactive teaching modules can help to cover this material and to engage millennial learners. Many such teaching modules are successfully in use in other medical specialties. Recognizing a need for such modules in psychiatry clerkship education, the Clinical Simulations Initiative (CSI) of the Association of Directors of Medical Student Education in Psychiatry (ADM-SEP) was established in 2010. CSI is a collaborative, multi-center effort to develop a free, peer-reviewed databank of teaching modules for psychiatry clerkships. Early CSI modules have been demonstrated to positively impact student confidence regarding specific clinical scenarios.

OBJECTIVES: There are 14 areas of psychopathology delineated by ADMSEP’s clinical learning objectives. The objective of this project is to complete three interactive, online learning modules for the following disorders: somatic symptom disorder, adjustment disorder, and alcohol withdrawal. Modules will feature up-to-date content to reflect recent changes in psychiatric diagnostic criteria. In addition, modules will contain quizzes and assessments to evaluate student learning and to provide responsive, informational feedback.

DESCRIPTION: Each module centers on a video presenting a clinical case. Videos are filmed using trained actors and simulate realistic patient-caregiver interactions. The edited video is compiled into 15-minute modules that incorporate learning objectives, interactive informational slides, and quizzing with responsive feedback. Modules maximize interactivity using frequent assessments and dynamic, interactive teaching elements. The focus on case-based learning and frequent problem solving keeps learners engaged and solidifies recall.

RESULTS: Three completed modules – somatic symptom disorder, adjustment disorder, and alcohol withdrawal – are currently being submitted to MedEdPortal, a website run by the Association of American Medical Colleges. After peer review, modules will be available for students to download for free from the MedEdPortal site. The modules will be available online for use during psychiatry clerkships or for other medical education purposes.

CONCLUSIONS: A vast breadth of clinical scenarios must be covered during the clerkship year of medical education, both for licensing and for educational purposes. Computer-based interactive teaching modules can help to cover material that students may have missed and can reinforce material students have seen. Three completed learning modules for psychiatry clerkships have been completed and submitted for online dissemination. After peer-review, these modules will be available for students to download and learn from during the clerkship years. Future directions for this project will include scripting, filming, and compiling modules for other areas of psychopathology delineated by ADMSEP’s clinical learning objectives.
Introducing First Year Medical Students to Oncology Care Through an Elective Seminar Series
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STATEMENT: With over 14 million people living with cancer in the United States, physicians from all specialties invariably treat patients who have at one point received a cancer diagnosis. Advancing the quality of care for these patients requires that all physicians be educated in oncology and its various disciplines. However, undergraduate medical student exposure to oncology is fragmented and predominantly limited to clinical curricula.

OBJECTIVES: An oncology seminar series was designed and implemented for first year medical students (MS1s) to improve their knowledge of oncologic disciplines by educating them about these disciplines from both a research and clinical perspective.

DESCRIPTION: MS1s at a single U.S. medical school were invited to participate in the Scholars in Oncology-Associated Research (SOAR) summer program, which included a seminar series of 10 lectures to provide a general survey of how clinical care, basic sciences, and social sciences apply to oncology as a multidisciplinary specialty. Lectures included topics specific to cancer genetics, medical, surgical, and radiation oncology, hospice/palliative medicine, survivorship care, drug development, cancer economics, and cancer disparities. The students attended one multidisciplinary tumor board and had the option to shadow a pharmacist, radiation therapist, or palliative care advanced practice nurse. Students completed self-assessments of their understanding of oncology and its related disciplines before and after SOAR. Likert-type scores were (1) not at all, (2) somewhat, (3) moderately, (4) quite, and (5) extremely and are reported as median [interquartile range]. Scores were compared using Wilcoxon rank-sum tests.

RESULTS: Of 21 students that enrolled, 18 successfully completed SOAR. Twenty pre- and 17 post-assessments were completed. On pre-assessments, 13 students indicated that they were planning to pursue an oncology-related specialty. Student self-reported understanding of oncology as a clinical discipline (2[2-3] vs. 4[4-4] p<0.01) and research discipline (3[2-3] vs. 4[4-4] p<0.01) improved after SOAR. As clinical/research disciplines, self-reported understanding of cancer genetics (2[2-3] vs. 3[3-4] p<0.01) vs. 4[4-4] p<0.01), medical (2[1-2] vs. 4[4-4] p<0.01)/(1[1-2] vs. 4[3-4] p<0.01), surgical (2[2-3] vs. 4[4-4] p<0.01)/(2[1-2] vs. 4[3-4] p<0.01), and radiation oncology (2[2-3] vs. 4[4-4] p<0.01)/(2[1-2] vs. 4[3-4] p<0.01), hospice/palliative medicine (2[2-3] vs. 3[2-4] p=0.04)/(2[2-3] vs. 3[2-4] p=0.01), and survivorship care (1[1-2] vs. 2[1-4] p=0.04)/(1[1-1] vs. 2[1-3] p<0.01). Self-reported understanding also improved for drug development (2[2-3] vs. 4[4-4] p<0.03), cancer economics (1[1-2] vs. 4[4-4] p<0.01), and cancer disparities (2[1-3] vs. 4[3-4] p<0.01) as research disciplines. Fifteen students attended a multidisciplinary tumor board and 6 attended an interprofessional shadowing experience. Opinion as to whether oncology requires multidisciplinary (5[5-5] vs. 5[4-5]) and interprofessional (5[4-5] vs. 5[4-5]) care was high upon pre-assessment, and thus did not show significant improvement. On post-assessments, students indicated that the tumor board (4[4-5]) and shadowing experiences (5[5-5]) were useful as education methods. Participants would recommend SOAR to future students (4[4-5]).

CONCLUSIONS: A structured didactic introduction to oncology, SOAR, was successfully piloted. MS1s report improved understanding of oncology and its distinct clinical and research disciplines. Future work will focus on expanding SOAR into a longitudinal oncology curriculum with additional interprofessional education.
STATEMENT: The Accreditation Council for Graduate Medical Education (ACGME) mandates that residency programs teach and evaluate communication skills. Delivering bad news is an essential aspect of patient-care that requires advanced communication skills. Despite its ubiquity, residents often report feeling underprepared and dissatisfied with their training in delivering bad news prior to entering residency.

OBJECTIVES: The objective of this study is to develop and implement a comprehensive curriculum to:
1. Provide continuity in delivering bad news training
2. Provide Residency Programs with a tool for assessing the “delivering bad news” competency of incoming residents.

DESCRIPTION: A comprehensive handoff curriculum was embedded into the GME Orientation for four core residency programs (IM, Peds, OB, Surgery) at one institution. The curriculum featured an online training module completed prior to GME Orientation and an interactive “Delivering Bad News” OSCE, in which participants were to deliver the news of a positive lung biopsy to a standardized patient using the SPIKES model. Participants were observed and given feedback by a trained faculty member who evaluated five observable behaviors on a Likert-scale. Objective performance ratings and pre- and post- survey data were used to assess the effectiveness of the curriculum.

RESULTS: Eighty-four interns completed the curriculum. Data from the online module and the simulation for breaking bad news were collected. The pre-survey indicated that 93% of incoming residents received prior training in delivering bad news but only 54% were satisfied with the training they received. Performance scores for five observable behaviors were rated using a 1-5 Likert-type scale. The respective averages were as follows: (1) Introduction = 3.6 (2) Assess patient perception = 3.5 (3) Explain diagnosis = 3.4 (4) Display empathy = 3.4 (5) Provide next steps = 3.5. Overall performance was associated with learner satisfaction with performance (r = .22, p = .05, pwcorr).
All trainees completed the post-survey following the OSCE. Most (88%) participants believed the OSCE was a realistic portrayal of a clinical setting and 95% believed the OSCE will be useful to their practice as a physician. 72% of participants felt that the online portion of the training prepared them well for the OSCE. Interestingly, only 60% of interns were satisfied with their performance and only 69% feel prepared to deliver bad news. Lastly, 92% of trainees would recommend this exercise for future incoming residents.

CONCLUSIONS: Positive learner-feedback about the intervention indicates that this method was well received by learners and is a promising strategy for teaching and evaluating the delivery of bad news. However, the low levels of satisfaction with personal performance and self-reported preparedness after the intervention suggest that more training is needed. One area for improvement may be with the online component of the training, where learner feedback suggests more review is needed. Finally, the strong correlation between satisfaction with performance and overall actual performance indicates that learners did have insight into their performance.
A Graduate Medical Education (GME) Scholars Track for Resident Trainees at the University of Chicago: Results from Pilot Year 1

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STATEMENT: Upon entering postgraduate training, a common career aspiration among residents is to become a clinician educator. Factors associated with this goal include training at a research-oriented program as well as strong mentorship and clinician educator role-modeling, but unfortunately interest in these careers may wane throughout residency training. A training program offering a structured approach to scholarship in medical education combined with formal mentorship may be advantageous in attracting trainees toward careers as clinician educators. However, these types of programs are uncommon.

OBJECTIVES: We aimed to create a longitudinal and comprehensive training experience within residency training to nurture and develop trainees who express a strong interest in becoming leaders in medical education. Furthermore, this addition of a GME Scholars Track into the already flourishing undergraduate and fellow/faculty development programs will complete a longitudinal curriculum of medical education instruction and allow the University of Chicago to continue as a leader in producing clinician educators.

DESCRIPTION: Two junior faculty members under the mentorship of senior leadership designed and piloted the two-year curriculum that includes a web-based didactic curriculum as well as a live program. The web-based curriculum covers curriculum development and adult learning theory. The live program includes completion of a mentored project in medical education, quarterly group meetings, direct observation and feedback of teaching activities by senior faculty, attendance at Research in Medical Education conferences, and participation in Resident as Teachers electives via participating residency programs.

RESULTS: The inaugural class (2014-2016) of GME Scholars included 11 residents from emergency medicine (2); internal medicine (2); pediatrics (3); surgery (3); and anesthesia (1). We surveyed participants about prior experience in medical education and career goals. All 11 residents have taught clinically at the bedside and 10 have taught via lecture or small-group. Ten have taught in the UME setting, and 5 in the GME setting. Four participants had not received any prior training on teaching skills. Half of participants had prior medical education scholarship. All residents hoped to use participation in the program to pursue a future medical leadership position. Eight residents wished to enhance medical education research skills, and all hoped to enhance skills in teaching. Recruitment for the 2015-2017 class of GME Scholars was opened to applicants from all residency program. This class was informed of their acceptance in May 2015 and includes 11 residents from emergency medicine (2), internal medicine (2), pediatrics (1), pediatric neurology (1), OB/GYN (1), psychiatry (1), general surgery (1), urology (1), and medicine/pediatrics (1). Following completion of the first class in 2016, we will evaluate satisfaction, and longitudinally we anticipate tracking future career positions, projects, publications and awards for participants in the track.

CONCLUSIONS: Resident trainees from many specialties have demonstrated interest in a dedicated track for pursuing scholarship and training in medical education. The GME Scholars Track was successfully designed and piloted to address the needs and desires of participants, and further assessment of satisfaction as well as career- and scholarship-related outcomes will aid in evaluating efficacy of this program in training future leaders in medical education.
The statement: At a time when over a third of Americans are obese and nearly two-thirds are overweight, the Affordable Care Act is pressuring health care providers to focus on preventative care and chronic disease management. Obesity and co-morbidities cost the U.S. roughly $190 billion every year. We would need to look no further than Chicago’s under-resourced communities, where fast food restaurants and convenience stores far outnumber fresh food markets, and health disparities to understand some of the barriers our patients face every day. Nutrition knowledge, food choices, and healthy cooking habits have been shown to play a significant role in the prevention and management of obesity and its related diseases. Yet primary care doctors, our first line of defense, feel unprepared to educate at-risk communities about these lifesaving skills.

Objectives: Our objectives were to 1) list and apply the key nutritional principles for overall health and its influence on chronic disease including Obesity, Diabetes CV disease via online learning modules and case scenario discussions, 2) list patient-centered and motivational interviewing skills to assess and deliver effective nutrition counseling to optimize positive patient behavioral change, 3) recreate basic preparation & cooking skills and meal planning for low resource families by working in the teaching kitchen with culinary nutrition faculty, 4) distinguish between various diets and to advise patients based on nutrition science data, including DASH and Mediterranean diets, and 5) identify personal barriers to self-care and have increased awareness about the importance of eating in community and of organic, local foods.

Description: During this extra-curricular activity, 14 U of C medical students participated in an innovative nutrition course called Culinary Medicine (CM), taught by physicians as well as a chef/registered dietitian (RD) instructor. Tulane’s CM curriculum was implemented, and students met weekly for 4 weeks for 3 hour sessions. In the 1st hour they summarized online evidence based curriculum about the Mediterranean and DASH diets and discussed patient cases highlighting how diet plays a role in management and prevention of specific chronic diseases, like hypertension and heart disease and diabetes. In the latter part of the class, the students cooked the dishes designed to highlight these principles and a nutritional analysis of each dish was reviewed while eating together and tasting the different meals prepared in community. Students were encouraged to reflect on their own eating habits and the challenges of making dietary changes. Our class was taught by 2 attending physicians and a chef/RD, which gave students an interdisciplinary and interprofessional learning experience.

Results: 100% of the students either agreed or strongly agreed that the course increased their knowledge in nutrition, taught them skills that will improve their ability to counsel patients, 93% appreciate the barriers to healthy eating and 100% agreed or strongly agreed that they can identify scientific evidence on nutrition and its impact on dietary counseling.

Conclusions: This course was well received by students who reported they would like to see it expanded, and to have more time to discuss the nutritional analysis of the dishes they created. They also desire more clinical content and would like to adapt the dishes to reflect the local customs/availability in the community. Computer-based interactive learning along with hands on kitchen work with a chef and nutrition-trained MD’s can create a lively environment for teaching nutrition and counseling. This culinary medicine program was successfully designed and piloted to address the need for an innovative way to teach clinical nutrition to medical students, helping prepare them for their future careers managing chronic disease and obesity.
STATEMENT: Fellowship directors have a unique role in the education of learners poised to become future leaders. Current faculty development programs through the Council of Resident Education in Obstetrics/Gynecology (CREOG) and Association of Professors in Gynecology/Obstetrics (APGO) focus on residency program and medical school clerkship directors, not fellowship directors.

OBJECTIVES: To perform a needs assessment of OB/GYN fellowship program directors (PDs).

DESCRIPTION: After obtaining IRB approval, we developed a needs assessment survey modeled after Sanfey et al (J Surg Educ 2012;69:156-61). Survey questions focused on administrative tasks, education and leadership and were reviewed for content validity by leaders in education. Program director emails were obtained through American Board of Obstetrics and Gynecology (ABOG) and subspecialty websites. IRB approval was obtained and the survey was emailed to all Ob/Gyn subspecialty fellowship PDs.

RESULTS: 89/231 PDs (39%) responded. 91% of respondents did not have formal PD training. Seventy percent attended educational programming through their specialty society, of whom 41% felt subspecialty society programs did not meet their training needs as PD. 49% responded that their designated institutional official (DIO) was not helpful with program administrative tasks. When asked to rank comfort with administrative tasks, the PDs (82%) were most comfortable with patient care and clinical teaching and least comfortable with administrative tasks (32%) and leadership/management (38%). Setting educational goals, communicating effectively and negotiating for resources were the top 3 skills PDs felt they personally needed to acquire.

CONCLUSIONS: More formal education of fellowship program directors in the areas of leadership, education and administration is needed. We plan to use these results to inform the development of a curriculum to augment subspecialty society programming.
Interprofessional Medication Management Module during the TIPPS (Transition to Internship: Procedures and Practical Skills) Course

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STATEMENT: The Liaison Committee on Medical Education (LCME) has mandated that the core curriculum of a medical education program involve interprofessional education. A recent needs assessment survey of Pritzker School of Medicine (PSOM) showed that the majority of students and faculty felt that graduating PSOM students lack sufficient interprofessional learning experiences, as well as training in medication management. The majority of students and faculty felt that fourth-year PSOM students would benefit from a medication management workshop.

OBJECTIVES: We conducted an interprofessional medication management module for medical students and pharmacy students to improve students’ confidence and competency in medication management, and attitudes about interprofessional learning.

DESCRIPTION: During the fourth-year PSOM elective Transition to Internship: Procedures and Practical Skills (TIPPS), we conducted a 3-hour medication management module in May 2015. Students completed pre and post surveys regarding their confidence in 3 of the 26 minimum geriatric competencies for graduating medical students (related to medication management) and their attitudes about interprofessional collaborative learning utilizing the Student Perceptions of Physician-Pharmacist Interprofessional Clinical Education (SPICE) instrument. This study was deemed exempt by the IRB.

RESULTS: Eight medical students and 5 pharmacy students completed the medication management module; pre and post-survey response rate was 13/13 (100%). On pre- and post-surveys using a 5-point Likert scale (1= not at all confident, 5=extremely confident), there was statistically significant improvement in student confidence in competency 1) understanding how physiology impacts drug choice and drug dosing (mean +/- SD pre 2.5 +/- 1.1, post 3.4 +/- 2.6, p=0.002), and competency 2) identifying potentially inappropriate and high-risk medications (pre 2.8 +/- 1.0, post 3.5 +/- 1.1, p=0.005). There was a nonsignificant trend toward improvement in confidence for all students for competency 3) documenting a complete medication list (pre 3.8 +/- 0.8, post 4.2 +/- 0.6, p=0.06). Pharmacy students rated their confidence higher than medical students’ rating of their own confidence for all 3 competencies both pre- and post-workshop; this difference was statistically significant for competencies 1 and 2 pre- and post-, and competency 3 pre-workshop. With regards to changes in students’ attitudes about interprofessional collaboration, there was statistically significant increase in agreement with the following statements: “Health outcomes are improved when patients are treated by a team of professionals from different disciplines” (pre 4.5 +/- 0.7, post 4.8 +/- 0.4, p<0.05), “I understand the roles of other professionals within the interdisciplinary team” (pre 3.8 +/- 0.8, post 4.6 +/- 0.5, p=0.009), and “Physicians and pharmacists should collaborate in teams” (pre 4.6 +/- 0.5, post 4.9 +/- 0.3, p<0.05). There was a trend toward increased agreement with the majority of the other statements in the SPICE instrument.

CONCLUSIONS: This interprofessional medication management module helped improve medical and pharmacy student confidence in medication management. It also strengthened medical and pharmacy students’ attitudes about interprofessional collaboration. Further interprofessional educational strategies should be developed for medical and pharmacy students.
STATEMENT: Because adverse drug events are unfortunately very common, educating healthcare providers and trainees on appropriate medication management is a priority. The Liaison Committee on Medical Education (LCME) has mandated that the core curriculum of a medical education program involve interprofessional education to prepare medical students to function collaboratively on healthcare teams.

OBJECTIVES: We performed a needs assessment survey to determine a) the current status of training in medication management for medical students at Pritzker School of Medicine (PSOM), b) the current status of interprofessional training at PSOM, and c) how best to educate PSOM students on medication management in older adults using interprofessional educational activities.

DESCRIPTION: We conducted surveys of 1) PSOM fourth-year medical students graduating in 2015 during the final semester of medical school, and 2) PSOM faculty in the Departments of Hospital Medicine, General Internal Medicine, and Geriatrics & Palliative Medicine. Both students and attending physicians were asked a series of questions through a paper or online survey. Questions included how well prepared graduating PSOM students were in the 3 (of 26) minimum geriatrics competencies focused on medication management, whether they received sufficient medication management training and interprofessional learning experiences, and what the optimal topics and methods are for improving education in these areas. This study was deemed exempt by the IRB.

RESULTS: Students’ response rate was 45/105 (43%); faculty response rate was 38/93 (41%). With regards to the 3 minimum geriatrics competencies, both students and faculty felt that students were relatively unprepared to explain the impact of age-related physiological changes on drug selection and dosing (mean +/- SD, students 2.1 +/- 0.9, faculty 2.6 +/- 0.8, 1=Not at all prepared, 5=extremely prepared, at the level of a proficient graduating medical student). Both students and faculty felt that PSOM students are moderately prepared to identify medications to avoid or use with caution in older adults (students 2.6 +/- 0.8, faculty 3.0 +/- 0.9). Students felt more prepared to completely document an older patient’s medication list (3.8 +/- 0.9) while faculty still felt that students were only moderately prepared (2.8 +/- 1.0). Thirty-three percent of students felt they received sufficient training in medication management in elders, while only 3% of faculty felt students did. Thirty-eight percent of students felt that PSOM students have sufficient interprofessional learning experiences, while only 6% of faculty felt they did. Both students and faculty ranked the following as the top 3 (of 9) preferred learning methods for this topic area: #1 Direct patient care, #2 Interdisciplinary team activity, and #3 Small group workshop. Both students and faculty ranked the following as their top 2 topics for students to learn: #1 Inappropriate medications and #2 Polypharmacy.

CONCLUSIONS: This needs assessment demonstrates that both PSOM students and faculty feel that PSOM students need more training on medication management in elders and interprofessional learning experiences. The results of this study are currently being utilized to create customized interprofessional educational experiences for PSOM students.
STATEMENT: Pediatric medicine has a lower volume of codes and critical events compared to adult medicine. While preferable from a patient care perspective, the infrequency of codes creates a deficit in training experiences for pediatric residents. Pediatric residents may lack confidence in codes due to their limited experience. Simulation provides an alternative to clinical experience, which can improve resident confidence (Van Schaik, 2008). Thus simulation plays a crucial role in pediatric residency, and needs to be optimized. One of the potential barriers to optimal simulation-based learning is participant anxiety about simulation. We initiated a new simulation curriculum for pediatric residents to provide them with experience in the most common critical pediatric events in hospital-based medicine. Through this curriculum, we are exploring the environmental factors associated with participant anxiety about simulation to optimize simulation-based learning.

OBJECTIVES: Our objectives were to provide pediatric residents with experience in managing common hospital based medicine emergencies through simulation, and evaluate which components of the learning environment affect learner anxiety.

DESCRIPTION: Pediatric residents participated in one-hour simulation sessions during their inpatient rotations through the University of Chicago Simulation Center. Each group consisted of 5-6 first, second and third year residents, similar to an inpatient team. They received an orientation to simulation, including introduction to the capabilities of the mannequin and available resources. The simulation scenario was based on one of several common inpatient pediatric emergencies. A structured debriefing, led by faculty, emphasized medical management, team communication/dynamics, and appropriate recognition of the need to escalate the level of care. Video of the scenario offered the opportunity for review of key moments. Participants completed pre-participation and post-participation surveys on their level of anxiety, attitudes towards simulation, and factors that increased or decreased their anxiety level.

RESULTS: 55 pediatric residents have participated in the simulation program to date, and 15 have completed surveys on anxiety and simulation. Evaluations have been positive, with 100% requesting more simulation experiences of this type. Participants identified debriefing as the most valuable component of the experience. Preliminary results of the anxiety survey indicate that participants reported moderate anxiety prior to the experience, but recognized the value of participating. Commonly identified factors that increased anxiety included lack of clinical experience, the presence of faculty, and being videotaped. Factors that decreased anxiety included: advance notice that the session would occur, having an orientation session prior to simulation, and previous experience with simulation. Interestingly, the presence of peers was reported to both increase and decrease anxiety, sometimes by the same individuals. Finally, participants reported that anxiety during simulation made the experience more realistic, and that they were more confident about their ability to respond to a similar event in the future.

CONCLUSIONS: Simulation experience for pediatric residents was valued by participants and increased their confidence in handling high acuity patient care in the future. Preliminary results show that environmental factors such as advance notice and an orientation prior to simulation sessions are beneficial to anxiety, while faculty observation and being videotaped increased anxiety.
Faculty and Resident Perceptions of iPad use in the Hospital Setting
WEI WEI LEE, MD, MPH; MARIA (LOLITA) ALCOCER ALKUREISHI, MD; VALERIE PRESS, MD, MPH; MICAH PROCHASKA, MD; DAVID MELTZER, MD, PHD; VINEET ARORA, MD, MAPP

STATEMENT: Use of tablet computers in the hospital is more common. Unfortunately, studies show interns spent much more time at a computer than in direct patient care. While iPad use in residency programs is increasing, it is unclear how physicians perceive iPad use.

OBJECTIVES: We aim to survey physicians at the University of Chicago on perceptions of iPad use and the impact on patient-doctor communication.

DESCRIPTION: We surveyed internal medicine residents (IMR) and attendings (general internists and hospitalists) at various conferences. Descriptive statistics were used to summarize the data and 2 sample tests of proportion were used to explore resident-faculty differences in perceptions.

RESULTS: 39 faculty (30 GIM, 30/32 [94%]; 9 HM, 9/11 [82%]) and 90 resident (90/101 [89%]) surveys were analyzed. Almost all faculty (95% [36/38]) reported residents used iPads, but only 18% (7/39) reported using iPads in the hospital themselves. Both faculty and residents agreed that resident iPad use improved patient care (87% [33/38] and 60% [54/90] respectively) and efficiency (97% [37/38] and 86% [77/90] respectively). Faculty were more likely to perceive that residents spend more time with this technology than with patients (76% [29/38] vs. 29% [26/90], p<0.001). While 40% (36/90) of residents agreed that iPad use “allows them to spend more time at the patient’s bedside providing patient education,” less than a third (27% [24/90]) reported frequent (≥ 4/month) use of iPads to “educate patients about medical conditions.” Roughly a third (29% [26/90]) of residents reported that iPad use negatively impacts their ability to communicate with patients. Few (39% [35/90]) residents “were confident in their ability to use the iPad in a patient centered manner.”

CONCLUSIONS: While both faculty and residents agreed that resident iPad use improved patient care and efficiency, faculty were more likely to perceive that iPads took residents away from the bedside. Moreover, one third of residents felt iPad use hampers their ability to communicate with patients and few were using the iPad to educate patients. Lastly, a minority of residents were confident in their ability to use the iPad in a patient centered manner. Our findings highlight the need to train providers to optimize use of iPads to engage patients at the bedside.
Elephant in the Room? General Medicine Faculty Perceptions of the Impact of Electronic Medical Record (EMR) on Patient-Doctor Communication

WEI WEI LEE, MD, MPH; MARIA (LOLITA) ALCOCER ALKUREISHI, MD; JEANNE FARNAN, MD, MHPE; VINEET ARORA, MD, MAPP

STATEMENT: Studies demonstrate that EMR use in exam rooms can prevent providers from focusing on patients. Despite widespread adoption of EMR in academic institutions in ambulatory settings, little is known about how general medicine faculty providers perceive EMR adoption and their ability to integrate the EMR in a patient-centered manner. While there are known EMR-related skills that enhance the clinical interaction, few providers receive formal training.

OBJECTIVES: We aim to survey General Internal Medicine (GIM) faculty at the University of Chicago on their perceptions of EMR use and the impact on patient-doctor communication.

DESCRIPTION: After reviewing the literature, we developed a 34 item survey with five-point Likert-scale responses on knowledge, attitude and skills pertaining to EMR-related communication in the outpatient setting. One year after the University of Chicago implemented the EPIC EMR system in the outpatient clinic, we surveyed GIM faculty members at a monthly section meeting. The following is a sample question from the survey: How much do you agree with the statement ‘I focus too much on the EMR and not enough on what the patient is saying.’ Likert responses at the high end of the scale were grouped to dichotomize data (i.e. agree/strongly agree) and descriptive statistics were summarized.

RESULTS: Thirty one (31/32, 97%) GIM faculty surveys were analyzed. The majority (58% [18/31]) of respondents were female and the mean age was 47 (range 33-59). Fewer than a third (28% [9/31]) rated their knowledge of ‘Patient-Centered EMR Use’ as good or excellent, with just over a third (35% [10/31]) reporting their skill level as proficient or expert. Despite this, nearly two thirds of respondents (64% [20/31]) reported they often or always integrated EMR-use with patients in the clinic room. However, respondents also reported agreeing with many statements about the pitfalls of EMR in the room. For example, 42% (13/31) agreed that ‘EMR use negatively impacts my ability to communicate with patients’ and just over a third (35% [11/31]) reported that ‘the EMR negatively impacts the patient-doctor relationship.’ Unfortunately, 42% (13/31) agreed that they ‘focus too much on the EMR and not enough on what the patient is saying,’ with the majority (68% [21/31]) reporting agreement with ‘I do not maintain adequate eye contact with the patient while using the EMR.’ Forty two percent (13/31) agreed that ‘using the EMR during the clinic visit is stressful’ and only half (52% [96/31]) were ‘confident in their ability to use the EMR in a patient-centered manner.’ Roughly one third (28% [9/31]) of respondents agreed that ‘prior to the EMR, I provided better patient-centered care.’ While 45% (14/31) reported the ‘training on patient-centered EMR use’ was very or extremely important to their clinical practice, only 1 person (3%) rated their training as good or excellent. The majority of respondents (71% [22/31]) agreed that ‘training on patient-centered EMR use should be required for all attendings.’

CONCLUSIONS: Faculty members in an academic general medicine practice report that EMR use can negatively impact patient-doctor communication in the outpatient setting, and that they struggle with eye contact and using the EMR in a patient-centered manner. Despite available best practices on EMR-related communication skills, few faculty members receive formal training. Faculty development courses should be implemented to address this gap in continuing medical education.
STATEMENT: Results from a national survey of medical school and radiology departments indicate that 75% of medical schools have no imaging requirements and greater than 90% of student imaging education are taught by non-radiologists. These results indicate that training is non-standardized leading to a potential variability in intern skills, adding to both the cost of training and variability of these future practicing physicians. Pediatric trainees, in particular, have a higher responsibility given the potential risks and deleterious effects resulting from radiation exposure.

OBJECTIVES: A pediatric topic-specific module was developed targeting core imaging principles relevant to referring pediatricians for medical students in their last year, to provide a more uniform imaging experience for those embarking into pediatrics. In this study we examined when trainees and students would prefer to learn the information included in the module.

DESCRIPTION: The pediatric medical imaging module was compiled by known educational experts in radiology and pediatrics, each identifying key vocabulary, concepts, and cases pertinent to pediatric care. To focus evaluation on the global concepts, key examples were selected for survey purposes to test the level of content. A Likert item questionnaire was validated and distributed to clinical medical students and pediatric house staff via email or a paper survey.

RESULTS: We received an overall 21% response rate without evidence of nonresponse bias. All of the respondents agreed that the content presented in the module was pertinent and of the appropriate level. All but one respondent thought it would be helpful prior to a pediatric internship. The clear majority (37/56) of respondents thought the material should be presented during medical school. Students preferred to be exposed to the material during medical school significantly more than post graduate trainees (Fisher’s = 0.002), which demonstrates an anticipated self-selection bias.

CONCLUSIONS: A topic-specific imaging module with content targeting future non-radiologists prior to graduating medical school was identified as relevant and of high value to both students and post graduate trainees specializing in pediatrics.
Additional Abstracts
Integrating Breastfeeding into Medical Education: A Longitudinal Approach

AMBER N. PRICE, MS, MD; MARIA (LOLITA) ALCOCER ALKUREISHI, MD; NICOLA ORLOV, MD, MPH

STATEMENT: According to the Academy of Breastfeeding Medicine’s educational statement, “All physicians, regardless of discipline, should have basic knowledge and skills in breastfeeding preventative maintenance, diagnosis, and treatment. Therefore, the theory and practice of breastfeeding should be incorporated routinely into medical school curricula.” Additionally, the Ambulatory Pediatrics Association & Council on Medical Student Education in Pediatrics (COMSEP) General Pediatric Clerkship Curriculum, which has been adopted by more than 90% of the Pediatric Clerkships in North America, further supports this by stating third year medical students should be able to not only describe the advantages of breastfeeding but also understand the common difficulties experienced by breastfeeding mothers. However, few medical schools formally address breastfeeding education in their curriculum and residents in pediatrics, OB/GYN, family medicine and preventative medicine report a lack of education in breastfeeding, lack of experience in breastfeeding skills, and lack of confidence in providing breastfeeding support to patients.

OBJECTIVES: To increase medical students’ breastfeeding knowledge, skills and confidence in providing breastfeeding support to patients through the development of a longitudinal breastfeeding curriculum for Pritzker medical students that will be incorporated into the Pediatric Clerkship.

DESCRIPTION: Kern’s six-step approach to curriculum development was used as a framework. A needs assessment administered to Pritzker medical students who had completed their 3rd and 4th year of medical school revealed deficiencies in recognizing newborn hunger cues, assisting with common breastfeeding positions, assessing an effective latch and suckling pattern and advising a breastfeeding mother on medication choices. Based on these results, a lecture was developed as part of the pediatric core lecture series for 3rd year Pritzker medical students. The lecture consists of a didactic portion and utilization of live breastfeeding dyads that demonstrate proper breastfeeding positioning and technique. In order to optimize the time devoted to first hand learning through the live demonstrations, plans are underway for the didactic portion to be delivered via a reverse classroom modality. Students take both a pre and post assessment to determine the impact of the lecture on their breastfeeding knowledge and comfort level, as well as an overall evaluation of the lecture. Future plans for the curriculum include development of standardized patients encounters to evaluate the student’s ability to apply knowledge gained from the lecture in a practical setting.

RESULTS: Each participant reported an improvement in knowledge in the following areas: hunger cues, breastfeeding positions, latch assessment, feeding patterns, stomach capacity, skin-to-skin and comfort level related to breastfeeding. Participants agreed that the lecture achieved the following: stated objectives met, informative and effective, relevant to pediatrics, new knowledge gained, effective live demonstration, enhanced ability to provide breastfeeding assistance and increased ability to teach breastfeeding to patients.

CONCLUSIONS: Breastfeeding knowledge and comfort level increased after a dedicated curriculum.
Evaluation of Mobile Phone-Based Real-Time Evaluation of Pipeline Program

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STATEMENT: Precollege enrichment pipeline programs for minority youth are crucial to the expansion and diversification of the health care workforce. Although many pre-college enrichment programs exist, research shows that there is not enough data to fully evaluate the effectiveness of these programs.

OBJECTIVES: The Training Early Achievers in Careers for Health Research (TEACH) pipeline program exposes underrepresented minority youth to clinical research and the hospital setting to cultivate career interests in hopes to diversify the health care workforce.

DESCRIPTION: Between 2004 and 2015, TEACH has collected data using the experience sampling method (ESM), where a watch will prompt students eight times a day to take a survey with pen and paper about their activities, thoughts, feelings, and peers at the time of the signal. In the summer of 2015, TEACH began using Personal Analytics Companion (PACO)-based ESM, where students were prompted to take surveys on their smartphone through the PACO application. At the end of their program, eleven TEACH students participated in a focus group that asked what students liked and disliked about PACO, whether or not PACO was disruptive to their schedule, and if they would have preferred being prompted by watches and filling out paper surveys. The qualitative and quantitative data from this focus group will help evaluate PACO-based ESM in its first year.

RESULTS: We found through quantitative analysis of PACO data that real-time engagement is higher when students are in TEACH vs. control and also higher as program progresses. In addition, we found that strengths of implementation, preference of PACO over paper-based ESM, and feasibility of data analysis make it worthwhile to continue working with PACO.

CONCLUSIONS: We learned that the strengths of PACO make it worthwhile to continue working with and improving PACO. Some of the strengths, including its user-friendly interface and ability to survey participants remotely, potentially make PACO a valuable tool to easily survey hospital staff and medical students. PACO has great potential for use in medical education because it collects data points in real-time while participants are in their programs, which allows educators to evaluate their programs effectively. When educators and researchers know which parts of their program are not well received, it allows for better improvement and more effective educational programs.
An Innovative Approach to the Enhancement of a Pediatric Cardiology Elective: From EKG Curriculum to Echocardiogram Boot Camps and Beyond

JUSTIN TRIEMSTRA, MD; PAULA WILLIAMS, MD, MS; H. BARRETT FROMME, MD, MHPE

**STATEMENT:** The pediatric cardiology elective at the University of Chicago Comer Children’s Hospital was found to be outdated and in need of enhancement through feedback from the residency program.

**OBJECTIVES:** Our project’s goal is to determine deficits in confidence, knowledge, and hands-on experiences of the pediatric cardiology elective for residents in the University of Chicago Pediatric Residency Program.

**DESCRIPTION:** A needs-assessment was distributed to past graduates of the residency program to better understand the potential gap in confidence, knowledge and skills of pediatric cardiology concepts upon graduation. An evidence-based approach to redevelopment of the pediatric cardiology elective occurred using these results.

**RESULTS:** Our data indicates a lack of confidence and ability in reading pediatric electrocardiograms (2.6 on a scale of 1-5) in graduates from our program. Also, over 50% of surveyed graduated residents responded they did not feel well prepared for boards. Furthermore, frequent comments requesting increased experiential learning opportunities were noted on returned surveys.

**CONCLUSIONS:** An overhaul of the elective curriculum occurred specifically focusing on creation of an EKG vertical curriculum, simulation-like training, and improved focus on American Board of Pediatrics cardiology content objectives.
Resident Training Meets ImmersiveTouch®: How Innovative Virtual Reality Simulation Training Programs are Helping Prepare Residents for Real World Procedures

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STATEMENT: Virtual reality (VR) surgical simulators can provide a safe and viable opportunity to learn and practice surgical techniques. The University of Chicago Simulation Center is working with several departments to promote VR learning by providing residents with “mission rehearsals” on the ImmersiveTouch® simulator which replicates complex procedures by combining 3D digital images and patented haptic technology to create hologram-like virtual anatomy which can be manipulated using virtual surgical instruments.

OBJECTIVES: The utilization of ImmersiveTouch® (ImmT) can significantly impact resident training by providing a safe learning environment in which residents can practice performing procedures created from actual medical imagery (CT and MRI data) of real patients. Specifically, the program allows the practice of procedures in an immersive, virtual manner with optimized anatomically-layered visual detail which is critical to practicing hand-eye coordination, recognizing anatomy and practicing proper instrumentation placement and movement. Additionally, this simulator provides performance evaluation, tracking number of attempts and an earned ‘score’ which can be used as discussion points with faculty. As such, the ImmT simulator can complement and enhance current teaching methods and comprehensive understanding of surgical procedures.

DESCRIPTION: The University of Chicago (UC) Simulation Center has worked closely with leading UC faculty along with the ImmT team to develop, pilot and implements several resident training programs: first, “Basic Procedures in Neurosurgery,” By Dr. Roitberg, was a 4 part series held in July 2015 which targeted junior residents from Chicago area neurosurgery programs, including the University of Chicago. The four didactic and virtual reality simulation included ventriculostomy, open pedicle screw insertion, percutaneous needle insertion, and trigeminal rhizotomy. Exposure to these different simulations enabled mission rehearsal for these invasive procedures and glean Dr. Roitberg’s expert feedback regarding their performance. Dr. Yang’s “Fluoro-guided Lumbar Puncture” program is aimed at teaching novice residents how to perform fluoroscopically-guided lumbar puncture, a common procedure practicing radiologists will perform in daily practice. Using this ImmT training module residents are afforded the ability to orient the C-arm and use fluoro to gauge the level and angle of needle penetration into the skin, all while “feeling” the different soft tissue layers as the needle penetrates on its way to the dural sac. Dr. Elmofty incorporates ImmT in her neuraxial procedure training for PGY2 anesthesia residents. After rich didactic and task trainer sessions that emphasize proper catheter insertion, Dr. Elmofty uses additional ImmT training to provide a 3D visualization of neuraxial space as well as haptic and kinetic feedback for tissue dexterity of structures such as the supraspinous ligament, intraspinous ligament, and ligamentum flavum.

RESULTS: Findings from program evaluations, thus far, suggest VR simulation programs are very valuable, with residents reporting that the imagery and haptic feedback were realistic. Residents also valued the opportunity to safely practice procedures under faculty guidance.

CONCLUSIONS: ImmT and other VR technology is expected to have increasing impact on resident education, competence and confidence. Additionally, the use of virtual reality training could provide an initial assessment of the trainee’s ability which could allow for more needs based personalized training.
Training Future Physicians to Address Intimate Partner Violence: A Public Health and Primary Care Priority

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STATEMENT: Intimate Partner Violence (IPV) is a critical public health issue. Although persons experiencing IPV frequently come into contact with the medical system, a significant proportion of these patients go without being appropriately screened, resulting in missed opportunities. Training future physicians to competently address this significant issue remains suboptimal.

OBJECTIVES: This research was conducted using two complementary approaches to obtain a better understanding of IPV training in medical education: 1) a systematic review of the literature was conducted to identify curricular initiatives designed to train medical students to provide quality care for persons at risk for or experiencing IPV; and 2) a cross sectional study was conducted to assess medical students’ preparedness to screen for and manage the needs of persons who have experienced IPV.

DESCRIPTION: 1) A systematic review of the literature was conducted and 2) an online survey was administered to medical students at LCME accredited medical schools in the Chicagoland area.

RESULTS: Published research on IPV curricula in medical education is scarce. Efforts to increase screening and prevention have not reached saturation and educational approaches vary widely by institution. Existing curricular models include electives, stand-alone lectures, and standardized patient encounters in the pre-clinical years, and lectures in the family medicine and emergency medicine clerkships during clinical years. It appears that few schools employ a truly integrated model of IPV education, in that rather than this topic being woven into and across several years and disciplines, it is still treated more like a “special topic” with one-shot lectures. Even with our current models, it has been found that IPV training is related to increases in knowledge, attitudes, and skills in asking about and responding to IPV. Barriers to curricular implementation include a lack of funding to support a new curriculum, lack of sufficient institutional support, insufficient curricular time to cover the topic, and personal and professional discomfort with the topic. Data analysis is currently underway to summarize findings of the online survey.

CONCLUSIONS: Our results are that most IPV curricula are not well integrated into the 4 years of medical school and the majority of the curricula are not being evaluating for learner competencies. We believe these elements are mainly responsible for the low rates of relevancy of IPV being reported by senior medical students. We need more evidence-based research about what model of training is most effective.
STATEMENT: How comfortable are fourth year medical students going into orthopaedic surgery/new PGY-1 residents in orthopaedic surgery with the ACGME/ABOS Level 1 milestones?

OBJECTIVES: The objective of this project was to quantify the comfort level of fourth year medical students going into orthopaedic surgery/new PGY-1 residents in orthopaedic surgery with select the ACGME/ABOS Level 1 milestones spanning multiple orthopaedic surgery subspecialties.

DESCRIPTION: An online survey was sent to 31 individual orthopaedic surgery program directors for distribution to their program’s PGY-1 residents prior to beginning internship in July 2015. PGY-1 residents were asked to rate their comfort with 60 Level 1 milestones from eight different orthopaedic conditions using a seven-point Likert scale, with 1 designated as “very uncomfortable,” 4 as “neutral,” and 7 as “very comfortable.” A response was coded as “uncomfortable” if it was between 1 and 4, inclusive.

RESULTS: 49 individuals (26.6%) responded to the surveys. When broken down by condition, the percent of responses labeled “uncomfortable” for all milestones in a single condition ranged from 19.89% to 69.05%. 5 of 8 conditions had “uncomfortable” percentages greater than 33.3%. Respondents were most comfortable overall with carpal tunnel and hip fractures and least comfortable overall with metastatic bone lesions and degenerative spinal conditions. When broken down by related domains, the percent of responses labeled “uncomfortable” for all milestones in a single domain ranged from 26.08% to 62.15%. 7 of 8 domains had “uncomfortable” percentages greater than 33.3%. Respondents were most comfortable overall with taking an H&P and with imaging. They were least comfortable overall with peri-operative management and with the natural history of each condition.

CONCLUSIONS: Medical school graduates starting orthopaedic training are uncomfortable with many of the Level 1 milestones. These self-assessments should be repeated by training programs to better documents entering resident competence at the Level 1 milestones. This knowledge may assist in designing training experiences for both 4th year medical students and PGY1 orthopaedic residents.
What Should Be in a Personal Statement: Comparing Applicant and Residency Program Director Views

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STATEMENT: The personal statement provides an opportunity for the applicant to provide information not found elsewhere in the residency application. In particular, this is the only place for the applicant to highlight personal qualities and motivations. Previous surveys of orthopaedic residency program directors revealed the personal statement to be of only moderate importance. One possible source of disconnect between the potential and actual value of the personal statement lay in differing applicant and program director perspectives on the thematic content of the personal statements.

OBJECTIVES: The purpose of this investigation is to assess the importance of various personal statement themes between applicants and residency directors.

DESCRIPTION: 20 applications (8 interviewed, 12 not interviewed) to a university-based orthopaedic residency program were randomly selected from application cycles from 2008 to 2012 (100 total applications). Personal statements were abstracted from the applications and all information identifying the applicant or the year the application was submitted was removed. Two individuals independently reviewed the statements, listing all themes in each statement. Themes were generated until no new themes were found. The statements were again reviewed and the frequency of each theme was counted.

Orthopaedic surgery residency program directors were surveyed and asked to rank the importance of each theme using a five point Likert scale. Rankings of the themes were generated, first from the frequency of occurrence in applicant personal statements and then by their mean program director score. An absolute difference in rank was calculated for each theme by taking the absolute value of the difference between the program director rank and the applicant frequency rank.

RESULTS: Coding revealed 23 unique themes. The themes were grouped into five domains, each containing four to six themes: 1) choosing orthopaedic surgery; 2) descriptions of hobbies, service, or outside activities; 3) characteristics of orthopaedic surgery; 4) academic background of the applicant; and 5) future career plans. 48 of 148 (32%) of the program directors responded to the survey. Comparison of the applicant theme rankings and the program director theme rankings reveals an absolute difference in rank position of > 5 for twelve themes (52.17%), including three of the top five themes program directors find most important and four of the top five themes applicants used most frequently.

CONCLUSIONS: A disparity exists between the personal statement themes applicants believe are most important (as evidenced by those with the highest frequency) and those program directors believe are most important. Applicants appear more likely to write about the virtues of the field of orthopaedics and their own interest in the specialty, while program directors highly value information about leadership qualities and work ethic. This disparity could be part of the reason program directors find the personal statement to be of marginal value in selecting applicants to interview. To make the personal statement more useful, applicants could write more about themes program directors value most highly or programs could more clearly communicate to applicants what topics to write about, or both.
Problem Based History Guides for a Student Run Free Clinic

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STATEMENT: Pre-clinical students often volunteer at student-run free clinics (SRFCs), where they learn history taking skills, perform basic procedures, and practice presentations to attending physicians. Yet little is known about medical student preparedness and attitudes toward free clinics.

OBJECTIVES: To assess student readiness for SRFC participation, provide an educational intervention, and to evaluate the student-reported utility of the intervention.

DESCRIPTION: We conducted a 2014-2015 survey of clinic volunteers at the University of Chicago’s Community Health Clinic group. We also created a “pocket card” to aid in history taking and distributed it to students. After 6 months of volunteering, we conducted a post-intervention survey.

RESULTS: Prior to volunteering, 66% of students did not feel prepared to take a thorough medical history and 91% did not feel prepared to generate a differential diagnosis. Overwhelming majorities believed that earlier training (89%) and printed resources (97%) would be beneficial. Students disagreed that volunteering in SRFCs sends an inappropriate message to patients (80%). Data from post-intervention will be complete by June of 2015.

CONCLUSIONS: Students feel under-prepared for their involvement in student run free clinics and overwhelmingly believe that they would benefit from earlier training or resources.
Rapid Cycle Deliberate Practice (RCDP) Simulation Curriculum for the Acquisition, Mastery and Retention of Essential Pediatric Advanced Life Support (PALS) Skills

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STATEMENT: The appropriate execution of Pediatric Advanced Life Support (PALS) skills is essential to increasing the probability of survival during a cardiopulmonary arrest. The incidence of pediatric cardiopulmonary arrest is low, 0.7-3% of all hospital admissions. Hence, the opportunity for mastery of skills required to successfully resuscitate a pediatric patient is limited. Nationally, pediatric resident resuscitation skills have been found to be subpar. While a multitude of studies have validated the utility in using simulation to improve these skills, questions remain regarding the optimal frequency and methodology required to attain skills retention.

OBJECTIVES: We aim to evaluate the impact on retention of resuscitation skills taught utilizing simulation and the teaching methodology known as Rapid Cycle Deliberate Practice (RCDP).

DESCRIPTION: We have implemented an RCDP-based resuscitation curriculum for residents rotating through the pediatric intensive care unit. Skills emphasized include chest compressions, intraosseous access, bag-valve mask ventilation, defibrillation and abilities as resuscitation leader. Residents undergo assessment of the aforementioned skills at the beginning of their ICU rotation and receive two iterations of the RCDP-based resuscitation curriculum during their one-month rotation. Assessments are conducted via a scoring instrument created using a blueprint of PALS objectives and expert consensus. Each item on the scoring tool was deemed by the experts to be of high importance when considering the competency requirements for resuscitation skills amongst pediatric residents. Six months post the curriculum, residents will be evaluated for skills retention.

RESULTS: Forty percent of our expected enrollment is complete. Of those enrolled, one hundred percent report an improvement in their confidence levels in performing the following resuscitation skills: chest compressions, defibrillation, bag-valve mask ventilation, obtaining vascular access using the EZ-IO and abilities as resuscitation leader. Upon completion of our study we aim to answer the following questions: 1. What is the level of PALS competency held by a pediatric resident in their PGY2 or PGY3 year? 2. Does an RCDP-based resuscitation curriculum improve PALS task-oriented and code leader skills? 3. Does an RCDP–based resuscitation curriculum increase retention of essential PALS skills at 6 months post the course?

CONCLUSIONS: Upon completion of this project, we expect the residents who participate will have stronger resuscitation skills and greater retention of those skills. The results of this study may support the utilization of RCDP-based simulation as an adjunct to the PALS provider course for improved resuscitation training and skills retention.
Development of a Preclinical Standardized Patient Encounter Addressing LGBT Health

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STATEMENT: Lesbian, gay, bisexual, and transgender (LGBT) people are estimated to make up between 3% and 4% of the U.S. population. Sexual and gender minorities have been shown to experience a range of health disparities, including a higher prevalence of certain cancers, infections, and chronic diseases. Many of the issues affecting the LGBT population at higher rates, such as substance abuse, obesity, and tobacco use, include leading health indicators as designated by Healthy People 2010. Another clinical concern for LGBT patients is an elevated risk of mental disorders, predominantly diagnoses of anxiety and depression, which is often linked to the concept of minority stress—encompassing the stigma and discrimination faced by LGBT populations. These health issues together have identified LGBT patients as an at-risk population. Prejudice against sexual and gender minorities persists within the medical community and has contributed to the health impacts of an often stressful social environment. Barriers to culturally competent care include a lack of material focused on LGBT patients within the curricula of medical schools. A survey of deans of medical education at medical schools in Canada and the U.S. determined a median of 5 hours of required LGBT-related curricular content. A study of medical students’ level of preparedness and comfort caring for LGBT patients found that most medical students (67.3%) rated their LGBT-related curriculum as “fair” or worse. The inclusion of LGBT-related content in medical education and increased exposure to LGBT patients has been shown to improve medical students’ behavior, knowledge, and comfort.

OBJECTIVES: Our objective is to improve LGBT-related curricular content at the University of Chicago Pritzker School of Medicine, aiming to reduce health disparities affecting sexual and gender minorities by promoting culturally competent care.

DESCRIPTION: To evaluate areas of LGBT-related training and education that medical students feel least prepared to address, we created a needs assessment survey to be distributed it to the entire medical student population. The survey will assess the knowledge, bias, and comfort level of students on topics related to LGBT patients and healthcare.

RESULTS: The results will be used in the development of a novel Standardized Patient encounter. As the Pritzker curriculum does not currently include an encounter with an LGBT patient, the Standardized Patient encounter created by this project will address an essential educational gap.

CONCLUSIONS: The key stakeholders of this project are Pritzker School of Medicine students, who will benefit from improvement of their education on the treatment of LGBT patients. The inclusion of LGBT Standardized Patients in the medical school curriculum is expected to improve students’ clinical skills and comfort level on the topic, while reducing misconceptions and biases. Faculty and staff will also benefit from an improved atmosphere of acceptance and engagement with vulnerable members of society. The final, and perhaps most important, stakeholders include LGBT patients, who will receive optimized care from medical students and future physicians who will have been better trained to care for them.

* Student Working Group on LGBT Health Disparities in Medical Education members are: Tiffany Bell, MS1; Reem Elorbany, MS1; Sarah Garcia, MS1; Cori Harris, MS1; Susanna Howard, MS1; Elizabeth Humphrey, MS1; Melany Lopez, MS1; Jacqueline Nichols, MS1
Academy Funded Research

and

Request for Applications: Medical Education Research
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Interprofessional Education in Medication Management in Older Adults:
A Physician-Pharmacy Trainee Collaboration
TIA KOSTAS, MD; JIZ THOMAS, PharmD; KATHERINE THOMPSON, MD;
JASON POSTON, MD; STACIE LEVINE, MD

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Sub-Internship Experience: The Virtual 4th Year Team
IRSK ANDERSON, MD; JEANNE FARNAN, MD, MHPE; DIANE ALTKORN, MD;
TODD STERN, MD; WEI WEI LEE, MD, MPH

Multimorbidity: Teaching Medical Students Principles of Care
for Patients with Multiple Chronic Conditions
MARIKO WONG, MD; KATHERINE THOMPSON, MD

For further information about previously funded medical education grants, please refer to our website:
http://pritzker.uchicago.edu/about/rfa.shtml
**Request For Applications: Medical Education Research**

*Sponsored by: The University of Chicago Pritzker School of Medicine’s Academy of Distinguished Medical Educators

**DEADLINE: FRIDAY, JANUARY 15, 2016**

In order to foster a learning environment for students and residents that is characterized by creativity, originality, and rigor, the University of Chicago Pritzker School of Medicine’s Academy of Distinguished Medical Educators is making research funding available to support proposals for projects in medical education.

The will be peer-reviewed through the Academy of Distinguished Medical Educators Steering Committee.

We are especially interested in receiving proposals related to the following themes but welcome proposals in other areas as well:

- Integration of clinical medicine and basic science
- Fostering scholarship in medical school and/or residency training
- Innovative programs in quality improvement or systems-based practice for students and/or residents
- Interprofessional education

If you are interested, please request an application form by emailing the University of Chicago Pritzker School of Medicine’s Dean for Medical Education (dean-for-med-ed@bsd.uchicago.edu). This email should include information as to whether the planned proposal pertains to medical student education, resident/fellow education, or both.

Proposals are due on January 15, 2016. Total funding for projects should not exceed $25,000 per year for up to two years, equally shared between the grantee’s department and the Dean for Medical Education (up to $12,500 per year from each source, with documentation of anticipated support from department chairman).

Awards will be announced by March 4, 2016 with funding to commence on July 1, 2016.

This RFA is the eighth cycle of research support available for medical education at the University of Chicago and is one element of an ongoing series of initiatives to foster research, innovation, and scholarship in medical education and to promote and sustain a strong culture of teaching at the University of Chicago and the NorthShore University HealthSystem.
ADME Programs:

FAME
( Faculty Advancing in Medical Education)

and

Teaching Consultation Service
Faculty Advancing in Medical Education (FAME) is a faculty development program sponsored by the Academy of Distinguished Medical Educators and the MERITS Program (Medical Education Research, Innovation, Teaching, and Scholarship). FAME supports faculty educators by providing resources and training in key conceptual and practical skills in teaching and assessment. Launched on September 16, 2011, FAME offers three or more faculty development sessions each academic year.

FAME Goals are to:
- Enhance faculty members’ knowledge of theory-based education and its practical application.
- Enhance faculty skills in teaching and assessment.
- Improve medical student and resident education.

FAME Objectives are to:
- Establish a framework for practically applying workshop topics to their teaching venues.
- Improve specific faculty teaching and/or evaluation skills.

**Upcoming FAME workshops:**

**Wednesday, December 9, 2015: 12 pm - 5 pm**
1. **Making a Smooth Transition—Teaching Patient-Centered Transfers of Care**  
   Keme Carter, MD & Amber Pincavage, MD
2. **Number Needed to Tweet: Integrating Social Media into Medical Education Part 1**  
   Nathan Trueger, MD
3. **Item Writing for Educators (Priority Registration to Course Directors)**  
   Vinay Kumar, MBBS, MD

**Friday, March 4, 2016: 8:30 am - 1 pm**
1. **Find Out What Students are Afraid to Tell You: You Practice, They Preach**  
   H. Barrett Fromme, MD, MHPE and Sandra Valaitis, MD
2. **You, Me and the Computer Make Three: Patient-Centered Communication Strategies for the Electronic Medical Record (EMR) users**  
   Lolita Alkureishi, MD and Wei Wei Lee, MD, MPH
3. **Approaches to Quality Assessment in Medical Education**  
   Nancy Schindler, MD, MHPE & Janice Benson, MD

**Tuesday, August 16, 2016: Chief Resident FAME**

**Past FAME workshops:**
- Giving Feedback
- How to Be a Supermodel: Using Role Modeling to Become an Exemplary Educator
- Teaching on the Fly
- Teaching in Rounds Geared Towards Millennial Learners
- Effective Lecturing
- Small Group Facilitation
- Objective Structured Teaching Encounters
- Direct Observation
- Challenges in Clinical Assessment
- Assessment of Learners: Linking Assessment to Goals and Objectives
- Effective Use of PowerPoint & Poster Presentations
- Teaching Procedural Skills
- Collaborative Solutions: Facing Competency Based Education & the Assessment of Milestones

For more information and to register, visit our website at: [http://pritzker.uchicago.edu/fame/index.shtml](http://pritzker.uchicago.edu/fame/index.shtml)
The Academy of Distinguished Medical Educators’ Teaching Consultation Service is a confidential, individualized educational consultation for those interested in an objective observation and formative assessment of their teaching skills.

Members of the Academy of Distinguished Medical Educators, who are trained to observe and provide feedback on teaching skills, are available for teaching consultation for one of several environments:

- Large group teaching
- Small group teaching
- Clinical teaching
- Procedural teaching

The consultants will individually tailor each consult to the teaching venue and needs of each faculty member through a pre-consultation discussion. All feedback will be confidential, though participants will receive a formal recognition of their participation, which can be included in their educational portfolio for promotion. Additionally, on request, the Service will notify the participant’s section chief or chairman for recognition of participation.

Faculty and residents have been utilizing this service for the past year and have found it to be an extremely valuable experience. Participants have noted:

“*I have been giving the same medical student lecture for years. I modified it this year based on the feedback from the Teaching Consultation and the response from the Course Director was “Wow, I don't know what you did, but this year it was better than ever!”*

*I found the advice to be excellent and very intuitive… This was one of the most valuable faculty advancement instruction I have received. It was direct, useable and personalized.”*

“*Through the Teaching Consultation Service, an expert educator observed me give a morning report presentation to my co-residents. Our debrief meeting after the presentation provided me with valuable input about how to increase audience engagement and participation and gave me insight into ways to clarify my teaching points. Thanks to this purposeful reflection and discussion, I have incorporated many of the concepts we discussed into future presentations. As residents and health care professionals, we are frequently teaching others, from medical students to colleagues to patients, and it was invaluable to have dedicated time to reflect upon and refine my teaching skills through the Consultation Service.”*