

SUBWAY SUMMIT ABSTRACTS 2019

Short Communications

SC1

Developing Novel USMLE-Style Items that Contain Multimedia Videos of Clinical Conditions for Computerized Assessments

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OBJECTIVE. The purpose of this short communication is to describe the development of novel multimedia (video-clip) USMLE-style items. We report (1) our experience writing these items over several years, (2) psychometric properties of these multimedia items (MIs) compared to traditional (non-multimedia) analogous items, and (3) feedback from students who took formative and summative assessments that contained these items. To enhance clinical anatomy, we introduced a novel USMLE-style item format that contained a written vignette with an associated video-clip of a clinical condition.

BACKGROUND. The NBME has explored the use of MIs on USMLE examinations for several years and the most recent NBME item-writing guide contains a new chapter on developing MIs. **METHODS.** MIs were created on select clinical conditions using YouTube video-clips. A clip was only retained if it had good visual quality (not pixelated when viewed on iPads) and clearly demonstrated the condition. It was converted to an MP4 file and then manipulated using the iPad app, Video Editor Free, which allowed shortening of the clip (<30 seconds) and audio removal. The clip was inserted into a USMLE-style, single-best-answer item that contained a short vignette. An analogous item was created that described the same clinical condition with a long vignette (instead of a video-clip) and the same cohort of 98 students was exposed to the item on a later assessment. Psychometric properties of both item versions were compared.

RESULTS. For the scoliosis MI, 95% of students answered it correctly and point biserial (PB)=0.15. For the analog to this item, 95% answered it correctly and PB=0.32. For the spinal tap MI, 98% answered it correctly and PB=0.41. For the ROM MI, 93% answered it correctly and PB=0.35. **CONCLUSIONS.** Most students answered MIs correctly. Comparative data suggest that removing video-clips from MIs make them more discriminatory. Weaker students may not be able to visualize anatomical structures with text-only vignettes, which may explain why these items had higher PB correlations. However, the real-world nature of MIs had an enormous impact on students because they vigorously debated them after assessments. Researchers should investigate whether students better retain information tested with MIs versus non-MIs.

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Paniagua MA, Swygert KA. 2016. Constructing written test questions for the basic and clinical sciences, 4th ed. Philadelphia, PA: NBME.

SC2

An Innovative Practicum for the Annual Clinical Skills Verification (CSV) Exam

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Abstract:

In 2007, The Clinical Skills Verification (CSV) exam was instituted by the ABPN to replace the live oral boards as a measure of clinical competency (Dalack & Jibson, 2012). The goals of the CSV are to assess core clinical competency with focus on three components: physician-patient relationship, interview and mental status examination, and case presentation. In addition to clinical assessment, the CSV was proposed as serving an educational purpose, with an opportunity for formative and summative feedback. An ABPN task force has set forth certain recommendations and requirements, including grading forms, suggested settings in which the CSV can be given, and standardization of assessment by faculty members (Jibson et al, 2012). However, execution of the CSV is program dependent and up to the discretion of residency administration. Beginning in 2014, our training program has implemented a formal, annual CSV 3-year practicum. This includes an interactive class for all incoming PGY2s, where residents watch recorded CSV interviews and identify key features of the interview, including information necessary to make a preliminary psychiatric diagnosis. In addition to the class, residents are evaluated by a team of four core outpatient faculty. This formal, boards-style evaluation, with several examiners in the room, is conducted by the same team three years in a row, beginning in the PGY2 year. These evaluations are timed at 30-minutes, followed by formal presentation, case discussion, and evaluation feedback. This standardized curriculum and approach to the CSV is a departure from some recommendations, including that the CSV be embedded in residents' normal clinical service load and conducted by service attendings. The practicum and annual standardized exam introduce a level of rigor that can be missing when residents are evaluated by their service attendings within the context of clinical responsibilities. Further, it allows for more formal feedback and homing in on residents' areas of strength and weakness. Over the three-year practicum, we have seen residents in this program significantly improve in their abilities to clearly and concisely gather history and mental status exam in order to arrive at a sound differential diagnosis and guided treatment plan.

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Psychiatry*, 36(5), 363. doi:10.1176/appi.ap.10040061

SC3

The Creation of a Comprehensive Measure of Academic Achievement: Part I

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Objective: To measure existing perceptions of academic achievement in order to create a framework for a novel academic achievement metric.

Background: While the advent of the h-index has allowed for a quantitative measure of one's publications and citations, there is no comprehensive and objectively created measure of academic productivity that takes into account the other notable achievements of an academic physician. Such variables include academic rank, journal editorship, society involvement, among others. Thus, as the first step in creating a novel and comprehensive measure of academic achievement, we sought to investigate the perceived importance of different accomplishments of an academic physician by surveying physicians nationwide and at our own institution.

Methods: The link to a survey (<http://mssurgerydept.com/academicsurvey/>) was distributed to plastic surgeons of different academic levels nationwide and faculty members at our institution from 2016 through 2018. After demographic questions, respondents were presented with random, unique, binary comparisons of 42 different achievements of an academic physician and were asked to choose the more important achievement. Respondents were able to complete as many comparisons as they desired until reaching the maximum 1,722. Descriptive statistics of demographics and win rates of each achievement (number of times a variable won / number of times the variable appeared) were reported.

Results: Respondents consisted of 127 unique users comprised of 10 department chairs, 97 senior attendings, and 20 junior attendings. 48% of respondents were plastic surgeons, 57% were fellowship trained, and 75% practiced exclusively in an academic setting. Respondents averaged 116 (SD=97.6) comparisons each, generating a total of 14,736 ranked comparisons. Win rates for the 42 variables ranged from 0.9 to 0.1, with dean of a medical school (0.90) attaining the highest win rate, and industry spokesperson (0.1) attaining the lowest win rate.

Conclusion: The survey responses of 127 physicians were used to order 42 different academic achievements by perceived importance using a unique survey methodology that did not require respondents to rank all 42 items. This ranked comparison data will be used to create a novel and comprehensive measure of academic achievement with a variety of potential applications.

SC4

Utilizing the Narrative in EPA (Entrustable Professional Activities) Assessments: A Natural Language Processing (NLP) Approach

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Background: Columbia is one of ten schools participating in an AAMC pilot for the implementation of core EPA's for entering residency. In order to ensure a student is entrustable in each EPA upon graduation each school has developed an assessment system to track each student's progress and development. Assessments include OSCE's, end of rotation evaluations and work-based assessments that evaluate a student's performance. One of the limitations of this assessment system is that it neglects the rich and useful narrative feedback provided to students.

Goals/Innovation: We aim to create a more efficient and timely narrative feedback processing system. Currently, faculty comments on EPA performance and trustworthiness/professionalism are distributed to students but there is no easy way to examine or sort comments and feedback for an individual student, or across the student body, to identify trends or needs. We incorporated NLP to analyze qualitative big data into a more useful form for both coaches and students to track EPA progress, and identify areas where a student may be able to improve.

Design: We are building an NLP algorithm to sort and identify faculty comments into targeted EPA buckets as well as trustworthiness/professionalism for sentiment processing. Key phrases were coded for each EPA category and given polarity designations as positive/negative... An "entrustment score" can be calculated based off sentiment to indicate in which categories effort should be concentrated.

Results: Individual student dashboards were designed to display overall "score" on various EPA categories to help guide learning efforts. Tableau dashboards were further designed to provide a "birds-eye view" and "detailed view" of performance for students and advisors.

Conclusions and limitations: We believe this is an early adaptation of NLP to process faculty comments on EPA performance. As such, the current algorithm has only been trained using a single school's EPA data. The algorithm will become more robust with additional data and feedback with growing users.

Next steps: The natural language processing algorithms built could be applied to any medical school seeking to analyze qualitative data about EPA performance.

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SC5

Using Standardized Clinical Skills Assessment (CSA) Metrics to Predict Student Clinical Performance

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Purpose:

The quantitative data from Objective Structured Clinical Examinations (OSCEs) may not comprehensively profile students' performances (Blatt et al., 2016). Additionally, the authors have noted that students with similar OSCE quantitative scores exhibit wide variability in their future clinical performance. To mitigate these assessment limitations, the authors explored whether standardized patient's (SPs) written comments on student OSCE performance help to explain the clinical performance differences observed for those students with similar quantitative OSCE scores.

Methods:

Standardized patients (SP) write comments in the categories of: history, physical exam, communication/interpersonal skills and global rating in OSCEs occurring at the end of second and third year at the Albert Einstein College of Medicine. We analyzed approximately 32,400 OSCE performance comments made from 2010-2018. The authors reviewed SP comments for themes and applied a scale rating their relative positivity or negativity. Analyses to evaluate the correlation between the themes and ratings with student's quantitative OSCE scores as well as the correlation between these comments and the students' future clinical clerkship grades (honors, high pass, pass, fail) are ongoing.

Results:

A total of 158 unique themes were identified from each domain as follows: interpersonal/communication skills ($n=66$) by global rating ($n=50$), physical exam ($n=23$) and history ($n=19$). The presence or lack of empathy was the most common theme while recurring themes include: student's organization, use of questions, establishment of rapport and display of emotional intelligence. Correlation with quantitative OSCE scores and clinical clerkship grades are ongoing with results expected by the medical education subway summit.

Discussion:

Interpersonal/Communication skills' themes were most numerous and often found in the comments of other domains, implying a greater impact on all parts of the encounter. Consistent with prior literature, global rating's most common positive and negative comments center on empathy suggesting that it's perceived as the most remarkable aspect of both good and bad encounters (Hojat et al., 2011; Menendez, Chen, Mudgal, Jupiter, & Ring, 2015).

Significance:

Qualifying student's performance affords educators the opportunity to provide students richer, more actionable feedback. Furthermore, the identification of themes that can reliably predict the future clinical performance of students may identify students struggling in ways that quantitative assessments do not. This permits efficient use of an institution's limited remediation resources and augments educators' ability to help students progress.

References

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SC6

Skills-Based Medicine: Ushering in the Next Generation of Performance-Based Training in Neurosurgery

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Abstract

Quality of neurosurgical care and patient outcomes are inextricably linked to surgical and technical proficiency and a thorough working knowledge of microsurgical anatomy. Neurosurgical laboratory-based cadaveric training is essential for the development and refinement of technical skills prior to their use on a living patient. As modern technological advances in neurosurgery—including 3D microscopy and endoscopy, virtual reality, surgical simulation, surgical robotics, and advanced neuroimaging—become more widespread and surgeons begin to rely more on their use, the need for integrated and specified training in their clinical utilization is imperative. Until recently, few means have allowed surgeons to obtain integrated surgical and technological training in an operating room setting. We provide a basic framework for establishing a next generation neurosurgical training and innovations laboratory, designed to recreate the setting of a working operating room, by reporting on a new model for technologically integrated skills-based neurosurgical training established at our institution. Additionally, we examine how these new technologies have altered the surgical learning curve and we assess how technology can be used to improve conceptual understanding of complex anatomy and enhance visuospatial skills in neurosurgical training.

SC7

Teaching Psychiatrists Neurology through E-Learning: A Model Curriculum

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Objectives of study: To propose a neurology e-learning model curriculum tailored to psychiatry trainees.

Background: Psychiatry residents are required by the Accreditation Council for Graduate Medical Education (ACGME) to complete two months of full-time neurology training. Little data exists on best practices and outcomes of neurology training for psychiatry residents. What data do exist suggest that clinical and didactic training are rarely specifically tailored to psychiatry residents' educational needs (Benjamin, Travis, Cooper, Dickey, & Reardon, 2014; Reardon & Walaszek, 2012). Providing specialized neurology didactics to psychiatry residents has the potential to enrich the neurology experience for trainees, but requires significant allocation of educational resources. Use of a reproducible, standardized e-learning curriculum allows for targeted neurology didactics while minimizing faculty and administrative requirements.

Design/Methods: A model curriculum for a 10-module e-learning series consisting of interactive, multimedia lectures implementing learning-theory derived principles such as technical scaffolding and spaced repetition of important topics (Lau, 2014).

Results: Key topics were determined based on a literature review and ACGME milestones (ACGME, n.d.; Shalev & Jacoby, 2019). The topics chosen include the neurological exam as well as a focus on the different subtypes of dementia. The curriculum will be instituted to all psychiatric residents at Maimonides Medical Center, a large urban community hospital. Outcomes data will be gathered, including the effect of the curriculum on interest in neurology and confidence in the care of patients with neuropsychiatric conditions.

Conclusions: The public health burden of neuropsychiatric disorders including dementia demand an interdisciplinary approach to treatment that incorporates neurologically able psychiatrists. Currently the neurologic training for psychiatry residents is lacking in standardization and measurement. We propose an innovative electronic neurology curriculum with the long-term goal of increasing standardization and applicability of neurology training for psychiatry residents nationally. Next steps include development of the e-learning lectures with the aid of an instructional designer and implementation of the curriculum at Maimonides Medical Center. The long term goal is to have the curriculum be available nationally to all psychiatry residents.

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SC8

Caseen: An Open Clinical Case Software for Online MedEd

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Objectives: The educational landscape of the last few decades has been transformed by the emergence of freely-accessible online resources like Wikipedia. Such community-driven repositories of information have allowed for the democratization of once highly restricted funds of knowledge. The Caseen team hopes to do the same, opening up the massive bodies of experience held by expert clinicians to learners around the world through an open case-based medical education platform.

Background: Experts have suggested that exposure to diverse clinical problem solving experiences assists with development of clinical reasoning skills across the UME to GME continuum (Schmidt & Rikers 2007; Cook & Triola 2009). After all, it takes a great deal of practice to achieve expert level clinical reasoning skills. Though clinicians have daily opportunities to care for patients with myriad disease states, they may go their whole career having never seen a patient with a particular disease or presentation. Medical students get an even more limited exposure to clinical cases, and need more opportunities to exercise their budding clinical reasoning skills. A solution comes in the form of virtual patient cases, which enable learners to hone their skills on-demand by managing a variety of different scenarios in a low-stakes environment — receiving valuable feedback and educational materials along the way to support their growth (Ericsson 2004; Cook & Triola 2009; Cook *et al.* 2010).

Design: Caseen allows anyone with a computer or smartphone to join a community of clinicians dedicated to the pursuit of clinical reasoning education. Users can both learn from our library of cases or author their own. Our editing software is both easy to learn and flexible, allowing clinicians to readily tailor scenarios to fit their learning objectives. Both learners and verified educators can also contribute to the community by reviewing cases to ensure content is of high quality.

Next Steps:

By putting case authorship tools in the hands of our users, the Caseen platform is creating a new online space where a global community of clinicians may form around the common goal of medical education. Moving forward, we to continue to grow our already passionate user base and expand our repertoire of clinical cases.

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SC9

STOP THE BLEED (StB): Development of a Perfused Synthetic Cadaver Model

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Introduction: As active shootings and other mass casualty incidents have become more prevalent, courses designed to teach basic hemorrhage control to laypersons have proliferated. In the current StB course, participants undergo hands-on training using a synthetic limb mannequin. In a prior survey of 302 participants there was overwhelming sentiment that the mannequin was limited by its inability to demonstrate cessation of bleeding when hemorrhage control techniques were applied. We hypothesized that enhanced flow characteristics (pulsatile flow and flow at variable pressure) that can be stanching by StB techniques would improve the mannequin, and hence the experience and confidence of trainees.

Methods: The mannequin was redesigned as a self-contained circulation model that could mimic both arterial and venous bleeding. Vessel material, construction, and placement were evaluated on their ability to mimic pulsatile blood flow and durability to repeated pressure, packing, and tourniquet applications. Multiple mechanisms of simulating blood flow (gravity, pump) were also trialed. An 85 ml synthetic rubber capacity bulb with a 7.4 mm inner diameter tubing were used resulting in a stroke volume of 16 cc per hand stroke and pressure of 20-25 kPa or 150-187 mmHg. The final mannequin resulted in an inexpensive, novel synthetic cadaver limb model that is equipped with vessels which mimic blood flow and provide a realistic wound on which to practice the hemostatic techniques of direct pressure, wound packing and tourniquet application taught in StB.

Results: Nurse and physician educators conducted beta testing of the perfused mannequin. One-on-one interviews revealed positive feedback regarding both realism of the perfused mannequin and participants' ability to obtain bleeding control using StB techniques. In addition, participants who trialed the mannequin reported an increased awareness of the rate of blood flow out of a wound, which in turn increased their sense of urgency in applying hemorrhage control techniques.

Conclusion: In an effort to address shortcomings noted by participants in the current StB mannequin, we developed a novel perfused-bleeding mannequin that mimics both arterial and venous bleeding, responds appropriately to various hemorrhage cessation techniques, and is both inexpensive and durable.

SC10

Implementing a Formal Faculty-Resident Feedback Protocol for NYU Neurology Residency

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Objective:

To determine whether an intervention encouraging formal verbal feedback from faculty to residents on an academic neurology teaching service will improve resident perception of feedback on performance.

Background:

Faculty-to-resident feedback remains an essential component of resident education and progression to independent practice. Feedback across different faculty members and clinical settings is often highly variable, of inconsistent quality, and commonly in the form of written evaluations after the rotation has been completed. As residents progress through their clinical education they are frequently unsure of their skill level. Faculty feedback represents an essential opportunity to objectively evaluate performance and provide guidance.

Design/Methods:

We sought to survey all members of the Neurology Residency cohort at New York University (NYU) on their opinions about the state of feedback from faculty within the residency. Then, faculty members were encouraged through email and at department-wide meetings to provide feedback verbally midway and near the end of the rotation. Six months after this initiative, residents will be surveyed regarding their opinion of feedback in the residency program. Topic points within the questionnaire include understanding of roles on the team, whether appropriate feedback is provided in numerous topic areas and whether communication within the neurology team is effective.

Results:

On the pre-intervention survey, NYU Neurology residents reported an approximate average of 3 on a 1-5 scale, with 1 being the most agreement and 5 being the least, that they were receiving adequate feedback on their performance on exam, presentations and professionalism. Residents overall were more satisfied with their feedback on their professionalism than they were with their feedback on neurologic exam and presentation skills. Residents reported an average of 1 on the same 1-5 scale for their satisfaction with understanding their role on the team.

Conclusions:

More investigation into the importance and quality of feedback on clinical performance is essential. Neurology residents in an academic training program are currently confident in their understanding of their role on the neurology team, but are dissatisfied with the quality of feedback. An intervention requesting verbal and more frequent feedback during a rotation may indeed assist in resident perception of the quality of feedback they are provided. Further survey of the NYU Neurology residency cohort is ongoing.

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SC11

Training Child and Adolescent Psychiatry Fellows in Quality Improvement and Patient Safety: a Didactic and Experiential Curriculum

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Goals/Objectives:

To develop a curriculum in quality improvement (QI) and patient safety (PS) for child and adolescent psychiatry fellows, which includes didactic, interactive, and longitudinal components, is effective in improving knowledge, attitudes and skills, and increases fellow involvement in quality and safety projects.

Background/Relevance:

Training the next generation of physicians on quality and safety is essential for compliance with high-quality practice standards, fulfillment of ACGME requirements, and providing exceptional and safe patient care. According to the CLER report in 2018, there is a gap between acquisition of QI knowledge and effective translation into clinical practice improvements. There are zero published QI/PS curricula in the field of child and adolescent psychiatry.

Design/Methods:

All child and adolescent psychiatry fellows (N=22) at NYU School of Medicine participated in a novel yearlong QI/PS curriculum. The curriculum consisted of IHI online learning, two QI/PS foundational workshops with didactic and small group interactive components, and monthly project supervision for second year fellows. Fellows learned how to develop SMART aim statements, define measures, create key driver diagrams, design and execute Plan-Do-Study-Act (PDSA) cycles, track and interpret data, and share findings through academic posters and publications. Fellows completed self-assessments of their core QI/PS conceptual knowledge and skills in year 1 (prior to curriculum implementation) and year 2 (after curriculum implementation).

Results:

There were significant differences in mean QI/PS knowledge and skills self-assessment scores from year 1 to year 2 (year 2 M=50.4; year 1 M=27.2; $t = -6.5$, $p < 0.05$). Following curriculum implementation, there has been a 100% increase in the number of fellows (year 2 N=6; year 1 N=3) actively involved in QI/PS projects resulting in scholarly posters and publications. 100% of participants rated the overall quality of the workshops as good or excellent.

Conclusions/Limitations/Next Steps:

The development and implementation of a didactic, interactive, and longitudinal QI/PS curriculum within child and adolescent psychiatry fellowship training led to improvements in fellow QI/PS knowledge and skills and active participation in QI/PS projects. Limitations include a small sample size, curriculum time, and challenges finding QI/PS faculty. Next steps include enhancing interactive, project- and case-based learning for the upcoming academic year.

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SC12

Maximizing Admissions: A Peer-Led Intervention for First-Year Internal Medicine Residents

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Goals:

In March 2018, a peer-led committee collected baseline admission rates and anonymously surveyed (via Google Forms) house staff officers to explore their attitudes towards admissions. Based on the responses, the committee developed an intervention to increase the rate of intern-led admissions by 50% over one academic year.

Background:

Performing admissions for newly admitted patients is a core component of Internal Medicine training. The proportion of admissions conducted by interns varies across residency programs, without any evidence to support ideal admission goals or strategies to facilitate them. In our program, senior residents conducted the majority of admissions, leading several interns to voice interest in performing more admissions under supervision by senior residents.

Design:

Launched in August 2018, the intervention consisted of three components: 1) an introductory email raising awareness of the admission rate imbalance; 2) surveillance of daily admissions obtained from the electronic health record (GE Centricity Enterprise); and 3) a six month series of peer-authored, biweekly emails reporting percentages of intern-completed admissions and encouraging interns to complete at least one admission per long call and night shift.

Results:

Fifty-nine of 114 (51.7%) house staff officers responded to the pre-intervention survey. Eighty-one percent agreed that interns should conduct more admissions. Reported concerns included decreased resident efficiency and creating additional work for interns. Prior to our intervention, 119 of 1,147 admissions (10.4%) were completed by interns. Post-intervention, 644 of 3,952 admissions (16.3%) were conducted by interns—a 56.7% relative increase from the pre-intervention rate ($t=4.88$, $p=0.0018$, 95% CI -8.7662 to -3.0438).

Conclusions:

Six months after initiating the intervention, the data demonstrated a statistically significant 56.7% increase in the rate of intern-led admissions, exceeding the initial goal of 50%. The intervention likely benefited from being peer-led with a built-in structure of consistent, positive reinforcement. This design-by-committee served to evenly distribute implementation responsibilities while emphasizing a house staff-driven attitude of proactive self-education. Beyond the six-month intervention period, data collection is scheduled to continue and a post-intervention survey may identify new barriers to sustainability and opportunities to further improve the educational experience of admissions for first-year interns.

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SC13

Development of Communication Skills Across the UME – GME Continuum

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Goals/ Objectives: We report on our OSCE-based assessment of communication skills from the first weeks of medical school through first year of medicine residency.

Background: The core Entrustable Professional Activities medical school graduates should be able to perform on day 1 of residency provides a framework for residency readiness. Communication skills are an essential foundation for core EPAs yet few studies describe communication competence across the UME-GME continuum.

Methods: Assessment of communication is consistent in our OSCE program across UME and GME. Domains include Information Gathering (5 items), Relationship Development (6 items), and Patient Education (3 items); assessed via a behaviorally anchored checklist (scores=% well done). We report on 3 multi-station OSCEs: the early-on, Introductory Clinical Experience (ICE) OSCE; the high-stakes Comprehensive Clinical Skills Examination (CCSE) OSCE, fielded after clerkship year; and the Medicine Residency Program's PGY 1 OSCE. Across 3 classes of medical school (2014-2016) we have complete data for 24 students who continued on in our Medicine Residency (and who provided consent).

Results: Communication scores show significant improvement through medical school (but not into residency) in Information gathering (ICE mean=56%; CCSE mean=76%; PGY1 mean=77%) ($F=11.54$, $p<.001$, ICE<CCSE) and in relationship development (ICE=59%; CCSE=78%; PGY1= 74% ($F=10.68$, $p<.001$, ICE <CCSE). Mean patient education skills, however, increase significantly across all 3 time points (32% to 50% to 65%; $F=31.00$, $p<.001$). Patterns are similar across cohorts except that the Class of 2016 means increase from CCSE to PGY1. Regression analyses show that CCSE information gathering scores are more strongly associated with PGY performance than ICE scores (Std Beta=.32 vs .06), while for relationship development, it is the ICE scores that are more strongly associated (Std Beta=.40 vs .24). ICE and CCSE patient education skills have associations with PGY1 skill of similar size (Std Beta=.30 and .28).

Conclusions: Findings, despite the small sample, suggest a clear developmental trajectory for communication skills. Information gathering and patient education skills may be more influenced by medical school than relationship development. Communication skills seem to level out in PGY1, highlighting need for re-consolidation as clinical complexity increases. Results point to transitions where skills practice/feedback may be particularly important.

SC14

Addressing the Unaddressed: Teaching Intimate Partner Violence to Residents

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Goals/Objective/Background:

Intimate partner violence (IPV) is defined as actual or threatened psychological, physical, or sexual harm by a current or former partner. An estimated one in three women in the United States will in their lifetime have an experience of IPV (1). Women who experience IPV have an elevated risk of psychiatric disorders (2, 3), comorbid medical conditions (2, 4), and adverse pregnancy outcomes (5). Accreditation Council for Graduate Medical Education (ACGME) requires that residents feel comfortable recognizing and appropriately responding to family violence (6). Literature regarding residents' ability to treat patients exposed to IPV is scarce. No standardized curriculum exists. Barriers to screening for IPV include inadequate training and knowledge (7). Training has been shown to increase screening rates in physicians. Therefore, training is likely a useful intervention for trainees (8, 9) Our aim was to develop a curriculum to address the documented gap in IPV training (10) and assess outcomes.

Design/Methods:

9 of 12 third year psychiatry residents participated in an intimate partner violence workshop. 8 of 9 residents responded to the post survey assessing their confidence on a scale of 1 (not confident at all) to 5 (very confident) in identifying IPV and comorbidities, psychotherapeutic interventions for IPV and treatment and safety planning before and after the workshop.

Results/Conclusions:

Workshops appeared to be an effective intervention in increasing residents' confidence in identifying and managing patients with IPV in all three areas assessed. Confidence levels increased from an average of 3 to 3.75 for identifying IPV and comorbidities, 2.4 to 3.75 for psychotherapeutic interventions, and 2.1 to 4 for treatment planning and safety. Significantly, the area with the largest increase in resident confidence was treatment and safety planning, which will likely have the most meaningful impact on our patients. Given there are no standardized guidelines to teach IPV in psychiatric training, this represents an opportunity for growth in education.

Limitations

This study was conducted with a small sample size and only one psychiatric program was assessed. We were also unable to assess whether actual treatment practices or rates of identification of IPV by resident physicians improved

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SC15

An Integrative Approach to Teaching History of Medicine in Medical School

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Goal: Our aim was to pilot the incorporation of history modules into the Microbiology and Infectious Diseases (Micro/ID) course at Albert Einstein College of Medicine.

Background: Medical history plays a foundational role in shaping the characters and habits of thought of developing physicians. Specifically, it cultivates an ability to assess the quality and durability of current knowledge and contributes to the growth of resilience, humility and intellectual curiosity. Especially for Infectious Diseases, knowledge of its history fosters an appreciation for our evolving understanding of the field and an opportunity to spark interest in a future career. Nevertheless, it is hard to find the space for this content amidst competing priorities in the medical school curriculum. An integrative approach has been described as a way to introduce history as a longitudinal component of the existing curriculum.

Methods: Students participating in the Micro/ID course were shown five history modules integrated into the existing course. The first was embedded within the introductory lecture and the remaining four were pre-recorded videos available through the virtual learning environment. The modules offered context to course material and introduced principles of medical history, such as the potential pitfalls of retrospective diagnosis or changing definitions of disease over time. Comprehension and retention were assessed via questions on the midterm and final exams. Students had the opportunity to evaluate the course material in both their exam and end-of-course evaluations.

Results: In the first year, students successfully answered the midterm and final exam multiple-choice questions 54-99% of the time. In the second year, a short answer question replaced the multiple-choice questions on the final exam. In the first year, student evaluation of the content was positive overall with 91% rating the content satisfactory, very good or excellent. However, some questioned the value of the material while others requested expansion of the modules to include topics such as history of research ethics (Tuskegee and syphilis) and more recent history (the HIV epidemic). Student evaluations from the second year of the project are pending.

Conclusion: An integrative approach to teaching medical history is largely well-received by students and offers a way to introduce historical topics to an entire class. Comments from students serve as a guide to topics of interest for future iterations of the course.

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SC16

It Can Be Done! A Skills Based Elective in Implicit Bias Recognition and Management for Preclinical Medical Students

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Goal of innovation: To design, implement, and evaluate a skills-based elective in implicit bias recognition and management. The intended learners are first-year medical students, therefore skills-development and practice focused on recognizing bias activation in oneself, perceived bias by another in an interpersonal encounter, and addressing potentially witnessed bias with peers and supervisors, including faculty.

Background. Implicit bias contributes to health disparities through communication patterns and medical decision-making.¹ Published curricula increase student knowledge and awareness, which may increase awareness both of bias being activated in themselves and in encounters they are witnessing.²⁻⁸ This increased awareness can create discomfort when students lack the skills to adequately manage implicit bias;⁹ to date, no published curricula achieve skill development in this area.

Design. We offered the elective in the spring of 2017 and 2018. The elective was informed by an evidence-based conceptual framework¹⁰ and transformative learning theory.¹¹ It consisted of nine instructional sessions and two feedback sessions. Throughout the elective, the authors incorporated active learning exercises focused on perspective taking, reflective writing, and role-playing. To evaluate the elective, the investigative team took notes and debriefed regularly. Student feedback was solicited through focus groups, whose transcripts were analyzed through thematic content analysis.

Results. Students engaged with all aspects of instruction, including the feedback sessions. Three themes resulted from analysis of student feedback. 1) Enhancing student engagement; 2) Empowering effects of implicit bias instruction; and 3) It can be done! Themes highlighted successful aspects of the course as well as the importance and feasibility of skills development and practice.

Conclusion/Limitations/Next steps. Preclinical students successfully developed and practiced skills related to implicit bias recognition and management in their own interpersonal encounters, and those they may witness. Limitations of this study include a small sample of self-selected students, limiting generalizability of our findings. Next steps include: 1) adapting the content to deliver an elective to students with clinical experience; 2) identifying opportunities in the existing compulsory curriculum to integrate successful components of the elective, and 3) disseminating findings in order to inform future curriculum development efforts and integration of discreet content areas within existing curricula at other institutions.

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SC17

Not Yet Professionals: Curriculum Impacts Medical Identity Formation in Dedicated Pre-Medical Students

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Objectives

- (1) To describe the baseline MPI of dedicated pre-medical students.
- (2) To examine the impact of a semester-long Medical Professionalism Course (MPC), on MPI of highly selected pre-medical undergraduate students.

Background

Internalizing a medical professional identity (MPI) is a longitudinal process that may begin before medical school. Recent studies of entering medical students have documented that MPI, measured by Kegan's stage score framework, vary at baseline and increase over time with education.¹ Little is known about the development of MPI in committed pre-professional students.

Methods

At the outset of MPC, which aims to increase medical professionalism knowledge through lectures, written reflections, and physician shadowing, students completed the Professional Identity Essay (PIE), narrative responses to 9 prompts that measures MPI in 9 stages (full and half stages between 1-5). At the end of the semester, students completed the PIE again. We conducted content analysis on the PIE narratives.

Results

53 university students completed pre- and post- MPC PIEs. PIE stage scores shifted upwards on average pre/post course: 2.5 (21.8%, 9.1%), 3.0 (38%, 45.5%), 3.5 (36%, 32.7%), 4 (1.8%, 9.1%). PIE content analysis showed that MPC increased student awareness of professional expectations and the value of reflection: "[Pre MPC]... I viewed studying medicine as studying and learning scientific medical knowledge...[Post MPC] I see that medical professionalism is much more complex...It certainly involves medical knowledge, but also things like cultural competency, self-care and happiness, spiritualism and humanism, medical ethics, communication, and empathy." As expected, post-MPC, many pre-professional students have not yet internalized an MPI: "...since physicians have been given such an enormous responsibility in people's lives, they must also live by the highest standards." Some began to internalize MPI: "I will have a duty to my patients and to the profession in general to make sure that I am providing the best treatment possible."

Conclusions

At baseline, students demonstrate variable MPI stage scores with distribution similar to that of entering medical students. Targeted education impacts stage scores. Post-MPC, students demonstrate greater knowledge and some more internalization of MPI; overall MPI remains pre-professional. Research is needed to further understand the continuum of MPI. Lusk, Curriculum impacts medical identity formation in dedicated pre-medical students.

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SC18

Healthcare Leadership and Management Scholars Program: An Innovative Approach to Filling a Gap in Medical Student Education

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Background: Physicians in administrative leadership roles are of growing importance in the healthcare industry. Beyond being at the forefront of clinical innovation, physicians need to be able to provide operational guidance to ensure the advancement of patient care. Medical students who demonstrate an interest in such a career path early in their education often lack appropriate exposure to resources and training to allow them to develop the necessary skillset for future roles in healthcare management.

Objective: The Healthcare Leadership and Management (HLM) Scholars Program at Weill Cornell Medicine (New York, NY) was developed to specifically address this critical void in education and provide exposure for medical students with a keen interest in healthcare management early in their evolution as physicians.

Methodology: The program is a unique eight-week intensive summer program exposing medical students to the business side of medicine through mentorship, leadership training, active participation in hospital initiatives and project conception, design and presentation, and clinical experience.

Results: Since 2016, there have been seven Scholars complete the program (five were female and two were male; five were of Asian descent, one Latino, and one Caucasian). Qualitative feedback from Scholars, mentors, and program leadership has been overwhelmingly positive, with iterative modifications made to the curriculum with each summer. Highlights of the summer for the Scholars have included developing mentor mentee relationships with faculty who they would not have had access to otherwise and developing and presenting final projects with impact on the Department of Emergency Medicine. Modifications have included moving to team-based projects and expanding the breadth of journal club topics. Two graduates from the program are currently attending MBA programs.

Conclusion: This program may provide Scholars a foundation upon which to make career decisions including whether to pursue additional advanced degrees, how to focus their scholarly work in medical school, type of specialty or institution they may choose for future training, and serves as a launching point for the development of future physician leaders.

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SC19

Initiating the Process of Professional Identity Formation in Novice Learners

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Background: Medical schools have a responsibility to cultivate professionalism in their students, but how best to do so remains debatable. We support the conceptual framework describing professionalism as an identity which evolves over time, adapting with the learner as they progress in their level of patient responsibility. It follows that fostering professional identity formation (PIF) early in medical school is critical as the foundation for this evolution¹. In fact, we have seen that there are real consequences when this early development is undervalued: disciplinary action in medical practice is associated with unprofessional behavior in medical school^{2,3}.

Innovation: Applying validated research, we developed a two-hour session, which included priming, noticing, and processing⁴, to serve as the commencement of PIF for first year medical students (MS1s) at SUNY Downstate. In line with the PIF framework, we grounded this session in learner-relevant experiences because identity formation must begin in the immediate milieu of the learner. We asked students to reflect on their recent white coat ceremony to explore shared expectations about professional behavior. We also discussed the concept of maintaining “affective neutrality” as a clinician through the lens of the students’ first ‘patient’: their anatomy cadavers. Learner relevant experiences also served to increase student engagement in the session.

Methods: We piloted the curriculum with the MS1 class at Downstate using groups of 10-14 students and 1 facilitator. We surveyed the students (n=142) to ascertain attitudes regarding specific behaviors aligned with Downstate’s previously established professionalism learning objectives.

Results: Half the class was surveyed prior to the session (n=65), with 42% and 49% respectively rating “practice[ing] professionalism on a daily basis” and “maintain[ing] a clear boundary between behavior in vs. outside of medical school” as relatively unimportant. The half surveyed after the session responded differently (n=75); only 23% and 35% respectively rated those statements as relatively unimportant.

Conclusion: This new curriculum increased the perceived importance of professionalism in medical students, suggesting that early reflection about professionalism through a lens that is personally relevant and appropriately adjusted to learning level may be an effective way to initiate the process of PIF in early learners.

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SC20

How an Academic Medical Center Built a Culture of Mentorship

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There is a national dialogue currently taking place about elevating the culture of mentorship to the level of a major strategic priority at academic medical centers in order to maximize their success¹. This session will focus on the creation of a Mentoring Academy in an ivy-league academic medical center, the launch of nearly a dozen mentoring focused programs and the creation of a culture of mentorship.

Research has shown that people who have mentors outperform, have higher salaries, greater job satisfaction and lower burnout than those who do not have mentors². It is also beneficial to the institution as collaboration, job satisfaction, productivity and retention improve²⁻⁶. While mentorship has always been part of the academic medicine background through teaching rounds, clinical observations, principal investigators/student relationship, etc., only now are we beginning to formalize and expand these initiatives as we bring it the foreground of our work.

In May 2018, Weill Cornell Medicine launched a Mentoring Academy, overseeing and guiding the mentoring and success of its 1,800 faculty members. Dr. Ruth Gotian, Assistant Dean for Mentoring and Executive Director of the Mentoring Academy, will discuss the myriad of programs, both on line and in person that have already been launched, starting with the mentoring at the very highest level of the institution – the dean. Information on our tailored ‘precision mentoring’ approach by topic and career stage will be discussed with a special emphasis on mentoring of women and underrepresented groups. An overview of the plethora of vertical, informal and formal mentoring opportunities offered will be shared as well as challenges faced. This is an ideal session for those looking to launch a serious and significant Mentoring Academy at their institution.

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SC21

“I’d Like to Thank the Academy....” Reflections on our Inaugural Fellows Academy

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Objectives:

To create a department-wide Fellows Academy to provide senior trainees with an inclusive educational forum, inter-divisional mentorship, networking opportunities and wellness activities.

Background:

Historically, the goal of residency and fellowship training has been to impart the knowledge and clinical skills necessary for the independent practice of medicine. However, we often provide our trainees with very few tools beyond these clinical skills to prepare them for entry into practice. Fellows in the final stages of training can often become siloed within divisions as they narrow their scope of practice. We created a Fellows Academy to bring together fellows across sub-specialties to discuss common issues as they prepare for independent practice and to enhance a broader sense of community within our department.

Methods:

We conducted an initial needs assessment survey to determine interest, meeting frequency, and topics of interest. In response, we planned three talks for the year - one on malpractice and one about preparing for a job interview - both requested by 80% of respondents. We also included a joint wellness session with residents about writing a condolence letter to a patient or her family. Fellows evaluated each individual session as well as the overall program.

Results:

48% of fellows completed the needs assessment. 70% felt that a Fellows Academy would be beneficial to their training and 30% were unsure. Evaluations of the individual events were extremely positive. All three sessions received a mean rating 5.0 out of 5.0. Representative comments included, “thanks for organizing - this was a great and under-addressed topic” and “moving, helpful exercise”. At the conclusion of the academic year, 100% of respondents felt that the Fellows Academy should be continued.

Conclusion:

Fellows appreciated the opportunity to come together as a community to partake in junior faculty development events relevant to their stage of training.

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PrIMES – Targeted and Individualized Mentorship Program for Closing the Medical Education Diversity Gap

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Background: Ethnic and racial diversity of medical school matriculants is paramount for rectifying health care disparities in the United States. Despite the national imperative to increase participation of underrepresented groups, disenfranchised minority students make up a small fraction of medical school graduates. Most research regarding interventions for increasing matriculation of these demographics focused on programs for garnering general interest, relying on subjective metrics to assess effectiveness.

Methods: We describe a framework for a longitudinal, targeted, near-peer mentorship program, the curriculum for which is designed using data generated by cross-referencing American Association of Medical Colleges (AAMC) benchmarks with quantitative analysis of a series of focus groups. In total, 11 groups of between 5 and 15 prospective and former medical students and their families, comprising 104 individuals including high school, undergraduate, post-baccalaureate, medical professionals, and parents were interviewed regarding perceived barriers and challenges to meeting the 36 AAMC application benchmarks. The data was used to design the curriculum, which is quantitative, easily trackable both in real time and longitudinally, and is easily generalizable to peer medical institutions.

Results: Our focus groups identified 47 unique factors affecting achievement of successful matriculation. These variables were categorized into 8 families: finances and resources, social skills, academic skills, interpersonal connections/experiences, attitudes and attributes, external academic factors, lack of knowledge, and environmental factors. Interpretation of the results yielded not only important links between identified benchmarks and specific barriers, but also their temporal evolution through trend analysis. In addition, we present an objective method to assess readiness for medical school application and target interventions to improve preparedness within a metric-based tracking tool to facilitate analysis, validation, and application of the results to peer institutions.

Conclusions: Despite national efforts, the healthcare education diversity gap persists today. Our data suggests that a targeted, longitudinal mentorship program will uniquely address this need, and may potentially succeed in maintaining URM students within local pipelines for medical school matriculation. We present our results in defining a targeted mentorship curriculum based on data from pipeline students cross-referenced with AAMC benchmarks.

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Diversity Mentoring Cascade

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Abstract:

The Diversity Mentoring Cascade program is a new program, part of our HRSA-funded Diversity Center of Excellence (DCoE) of the Cornell Center for Health Equity and co-sponsored by the Deans of Diversity and Student Life and the WCM Department of Medicine. A Mentoring Cascade is a form of inter-generational learning in which knowledge, values, and practice cascade from one generation of health professionals to another. Mentoring Cascade teams will be comprised of underrepresented minority faculty, medical school and residency alumni, fellows, residents and medical students, allowing for mentoring up and down the training “cascade.” The objectives of the Diversity Mentoring Cascade is to: facilitate professional growth and development; leverage diversity and experiences in order to empower URM students, residents and fellows to overcome barriers that hinder academic and professional success; create a supportive community for participants; and facilitate growth in mentoring skills for all participants. This program was created to expand URM medical student support in medical school and provide an outlet for participants to learn about the hidden curriculum through the curriculum of the program and mentors. It is one of five strategies to increase URM physicians. There are ten teams made up of 4-7 medical students, 3-4 residents/fellows, and 3-4 faculty. We are in the pilot phase and will be analyzing mentee checklist and program participant feedback to gauge impact. We will determine instruments to better track the effectiveness of the Diversity Mentoring Cascade in Year 2.

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SC24

Moving from Abstract to Manuscripts: Barriers to Graduate Medical Education Research Publications

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Goals/objectives of study/innovation: Our primary study aim was to explore barriers preventing resident and fellow physicians from publishing research posters presented at Annual House-staff Research Day. We hypothesized time and mentor support as barriers. Our secondary aim was examining associations between prevalence of publications with sociodemographic characteristics.

Background/Relevance of Study: Scholarly activity is required in GME programs^{1, 2}. Although reasons for lack of resident and fellow research publications are cited^{3,4}, it was important for our team to investigate this for our institution to gear curricula and resources to support resident and fellow research, and prepare faculty mentors. We noted a downward three-year trend in number of publications from Research Day, so we conducted this study to explore perspectives of our residents and fellows.

Design/Methods: After IRB approval, a prospective, cross-sectional exploratory design was implemented to discover phenomena of barriers to residents' and fellows' research publications. Non-probability, purposive sampling was applied including eligible participants meeting the following criteria: a) physicians graduated from residency and fellowship programs in June 2018 or still currently completing residency or fellowship training, AND b) participated in Research Day (both a and b criteria must be met). A confidential web-based survey via Qualtrics was emailed, with items about: basic demographic information (gender, age), academic information (years of residency completed, specialty, subspecialty), and items about perceived barriers to publishing their research (time, mentorship, knowledge). Moving from Abstract to Manuscripts 2

Results: N = 24, response rate of 14%. Although majority of respondents (83%) presented their Research Day abstract at professional meetings, 67% did not publish their abstract as a manuscript. Respondents stated not enough time (25%) and not enough mentor support (25%) as the primary barriers. Free text responses indicated lack of perceived incentives for publishing, inadequate time for faculty development about research, and decreased biostatistician access.

Conclusions/Limitations/Next Steps: Although we acknowledge the low response rate, our findings provide future direction of operations and resources surrounding resident and fellow research. We shared these results with our institutional GME committee, and are investigating methods to build communities of mentoring. We are also looking at web-based learning delivery of biostatistics faculty development sessions.

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SC25

A Student-Driven Initiative to Confront the Opioid Epidemic

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Background: Persons with opioid use disorder (OUD) represent an estimated 4-11% of hospitalized patients and are increasingly admitted for opioid related complications. Medical students may be well positioned to have a significant role in coordinating treatment for patients with OUD. Although teaching hospitals represent only 5% of America's medical centers, approximately 61% of emergency department discharges for substance related disorders in 2014 were from these institutions. In light of these data, the AAMC has encouraged medical schools to incorporate pain, substance use, and addiction training at all levels of medical education.

Innovation: This initiative educates medical student volunteers to identify hospitalized patients with OUD, connect them with physicians who will initiate buprenorphine, and facilitate their transition to outpatient care.

Methods: We identified hospitalized patients with OUD who were not already engaged in treatment in two ways: 1) medical students screened a daily electronic report which captured all new admissions or emergency department visits whose medical chart suggested recent opioid use and 2) hospital staff directly referred patients. Identified patients were evaluated for buprenorphine eligibility in person and appropriate candidates were started on buprenorphine and titrated to a stable dose. Prior to discharge, patients were referred to REACH, Mount Sinai's clinic for persons who use alcohol and other drugs, for outpatient care.

Results: From July 30, 2018 to March 12, 2018, we screened 2011 encounters, 1966 (97.8%) of which were identified via the report, with the remaining 45 (2.2%) via direct referrals from clinicians. Fiftyseven (2.8%) patients were evaluated, 15 (26.3%) of whom were started on buprenorphine in the hospital. Of the 42 not started on buprenorphine, 39 (68.4%) were referred to REACH or another program for opioid addiction treatment, where 4 eventually started buprenorphine at REACH.

Conclusion: As hospitals see increasing numbers of opioid related admissions, medical students can play a key role in identifying patients with OUD, initiating buprenorphine, and facilitating linkage to outpatient treatment. Inpatient hospitalizations are a 'reachable moment' for persons with OUD and an opportunity to empower medical students to care for this population.

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Transforming Medicine from the Classroom to the Clinic: Lessons from the National Neuroscience Curriculum Initiative

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Objective: The National Neuroscience Curriculum Initiative (NNCI) was established in 2013 to develop a comprehensive set of shared, open-access resources for teaching neuroscience in psychiatry.

Background: The field of psychiatry faces unparalleled challenges in the translation of research to clinical practice. While most disciplines of medicine are rooted in a biological understanding of illness, the field of psychiatry largely developed prior to advances in modern neuroscience and in the absence of sophisticated biological explanations. What has resulted is an enormous practice gap: Despite the central role that neuroscience is poised to assume in psychiatry, the field continues to underemphasize this essential perspective [1-2].

Methods: We developed courses (or learning modules) that employ interactive approaches for teaching neuroscience in the classroom. For each module we developed a facilitator's guide with step-by-step instructions for implementing in-class exercises, as well as additional resources, such as videos, worksheets and answer keys. We created additional resources for self-study and use in clinical settings, including a collection of brief accessible reviews and short animated videos in which core neuroscience topics are translated to a clinically focused audience. Dissemination of these resources included the creation of a website repository (freely available at www.NNCIonline.org) as well as training programs at national conferences and local institutions. Participants are encouraged to contribute additional teaching sessions which are peer reviewed for publication on the NNCI website [3].

Results: To date the NNCI has developed over 150 teaching sessions, reflecting the work of 120 authors from 50+ institutions. Over 40 brief articles have been published in collaboration with *Biological Psychiatry* as a series of Clinical Commentaries. The NNCI has run over 25 faculty development workshops in collaboration with numerous national and international organizations. Between March 2015-March 2019, the website (www.NNCIonline.org) has hosted 43,749 unique users from 160 countries with 441,844-page views. More than 200 psychiatry training programs have reported implementing NNCI teaching materials.

Conclusions: Individual residency training programs often struggle to keep pace with scientific advances and new training requirements. This multisite collaborative provides a model for integrating cutting-edge science into medical education and the practice of medicine more broadly.

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Creation and Implementation of Pediatric Patient-and-Family-Focused Simulation Methodology in an Objective Structured Clinical Experience

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Background and Relevance

Despite shifts in medical education from teacher- to student-centered paradigms, simulation-based medical education (SBME) is predominantly developed and implemented by medical professionals. Debra Nestel and colleagues have proposed “patient-focused simulation” (PFS) methodology as a means of authenticating patient perspectives. PFS offers a “complementarity model” of medical education that values equal perspectives from patients, students, clinicians, and teachers. This reflects contemporary partnership models of healthcare delivery, and may herald another cultural shift in medical education.

Goal

Our goal was to pilot PFS methodology in the development and implementation of a formative Objective Structured Clinical Experience (OSCE) for medical students in the pediatric clerkship, thus creating a model for pediatric patient-and-family-focused simulation (P-PPFS). Our objective is to share lessons learned from piloting this methodology with learners and educators.

Design

We partnered with members of the New York-Presbyterian Morgan Stanley Children's Hospital's Family Advisory Council (FAC) and Council of Helping Advisory Teens (CHAT) to provide patient and family perspectives. We modified the three phases of PFS methodology: (1) In Phase I, we conducted feedback sessions with FAC/CHAT members to develop and revise three proposed pediatric OSCE cases; (2) In Phase II, FAC/CHAT members worked with our simulation team during standardized patient (SP) training; and (3) In Phase III, FAC/CHAT members observed and gave feedback on the OSCE pilot to finalize curricular content.

Results

The P-PPFS OSCE was piloted with 20 medical students rotating through the pediatric clerkship. Patient and family input resulted in four primary outcomes: (1) identification of key communication skills and behaviors expected of learners; (2) refinement of character sketches to overcome implicit biases with respect to race, gender, sexual orientation, and physical abilities; (3) titration of SP affective expression (i.e., pain, anxiety, surprise); and (4) implementation of staging changes (i.e., room décor and props) for a more realistic setting.

Conclusions

Incorporating patient and family perspectives utilizing P-PPFS methodology greatly informs SBME with regards to patient communication, implicit bias, affect modulation, and scene fidelity. The patient/family voice is critical for authentic pediatric SBME, and the “complementarity model” of curriculum development may be applied more broadly in medical education.

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Best Practices in Transitioning Student-Run Free Clinic Leadership to Ensure Program Longevity and Encourage Innovation

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Objective:

The goal of this presentation is to characterize common shortcomings in transitioning medical student leadership of Student-Run Free Clinics (SRFCs) and recommend best practices to overcome these pitfalls.

Background:

SRFCs provide a unique opportunity for students to be involved in caring for the underserved while gaining valuable experience in the administrative and developmental roles in a clinic. Each year, these positions must be transitioned to junior medical students, resulting in a high annual turnover. While there is a wealth of literature on corporate leadership transitions, including those of healthcare teams, there is a little discussion of student organizations even when they directly impact patient care. The EHHOP Consulting Group (ECG) of the Icahn School of Medicine at Mount Sinai is a student organization staffed by health professions students trained in offering multi-modal support to free clinics. By working with client clinics, we have identified that leadership transition is a highly impactful area of weakness for student clinics. Poorly executed transitions can cause organizations to stagnate, or worse, fail to meet key milestones. Given their role in patient care, SRFCs should prioritize sustained growth and innovation that helps them better serve their communities. Optimizing leadership transitions are a critical part of achieving these goals.

Methods:

ECG has consulted for many SRFCs and amassed significant experience in identifying and overcoming failures in student leadership transitions. We have integrated this experiential knowledge with information acquired through clinic leader interviews, independent research in management theory, and literature review of best practices in student leadership transitions. We describe how these practices can be implemented and present supporting case studies.

Results:

We identified the common failures in student leadership transitions as:

1. Poor timing
2. Inadequate transition duration
3. Insufficient level of instruction

We identified the best practices as:

1. Overlap period with increasingly shifted responsibility
2. Detailed transition documentation

3. Idea sharing

Conclusion:

Herein, we present common failures and suggested best practices in student leadership transitions. By utilizing these strategies, SRFCs can ensure program longevity and encourage innovation to maximize SRFC impact. These practices can also be applied to leadership transitions in other student organizations, given commonalities in turnover.

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Medical Student Attitudes Towards Interdisciplinary Interactions: A Student-Run Free Clinic Perspective

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Goals/ Objectives of Study: The Weill Cornell Community Clinic (WCCC) has recently expanded early interprofessional exposure (IPE) for medical students by integrating pharmacy students and their supervising pharmacists into clinic practice. We decided to explore the impact of this program on the knowledge and attitudes of clinical medical students towards IPE while they rotated in WCCC for six weeks as part of their required Ambulatory Medicine clerkship.

Background: Interdisciplinary teams are a fundamental part of providing comprehensive medical care that improves population health while reducing cost.¹ It also results in fewer hospital errors and higher patient satisfaction rates.^{2,3} Interprofessional collaboration, a core competency for medical student education by the Liaison Committee on Medical Education (LCME), is provided by many medical schools as part of their curriculum but is given limited time.

Description: Using the pre-validated Student Perceptions of Physician-Pharmacist Interprofessional Clinical Education Instrument (SPICE-R2), surveys were distributed to third year medical students at the beginning and end of their 6-week rotation within the clinic. Attitudes towards interprofessional exposure with pharmacy students were assessed on a 1-5 scale (1=strongly disagree, 5= strongly agree). Pre- and post-intervention data was analyzed using 1-way ANOVA across categories and two-tailed paired t-tests within three categories based on SPICE-R2 designations: interprofessional teamwork and team-based practice, roles/responsibilities for collaborative practice, and patient outcomes from collaborative practice. Twenty medical students were assessed.

Results: Overall SPICE-R2 score improved from 4.04 to 4.35 (7.67% increase) (p=0.01). The biggest change in category score was observed in the overall roles and responsibilities section, which increased from 3.27 to 3.91 (19.5% increase) (p=0.0001) with the understanding of the course taken by and training requirements of other health professionals showing the largest area of improvement of any question with an improvement in score of 34% (p=0.0058). Overall teamwork scores increased 4.5 to 4.7 (4.7% increase) (p=0.0026). Overall outcome scores did increase, although not significantly (p=0.62).

Conclusion: Early exposure for medical students to pharmacy students demonstrated improved teamwork and a better understanding of the roles, responsibilities, trainings, and courses required by other professions. Interprofessional exposure in medical school student run free clinics provides an excellent opportunity to foster interprofessional growth and collaboration.

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SC30

Medical Student Clinical Elective: Exploring Social Determinants of Health at an Urban Community Hospital

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Background/Relevance of Study:

Increasingly, the importance of social determinants of health and their impact on health outcomes have been emphasized during undergraduate medical education. It is largely agreed upon that this material should span the four years of medical training. However, how and when health equity should be addressed specifically during the clinical years of training has yet to be established, and often lies within the “Hidden Curriculum” where students observe and learn implicitly from their superiors. The Health Equity clinical elective aims to offer dedicated time to focus on a patient’s root cause of disease through clinical encounters with admitted inpatients, coupled with exploration of relevant social determinants through discussions and field learning.

Goals/Objective of Study/Innovation:

The objective of this clinical elective focusing on Health Equity is to explicitly discuss relevant social determinants of health using dedicated time outside the traditional clerkships, with a goal to support students’ career interest in this area.

Design/Methods:

Time is allotted to conduct in-depth patient-centered interviews of patients identified by inpatient teams as having barriers to optimal health. Interviews are followed by group discussion with the preceptor and engagement with the primary team. Observations at bedside lead to questions about larger societal issues, which students and faculty are then encouraged to explore (i.e. patient describes their unstable housing, process of using housing vouchers, and fear of discrimination, which prompts us to explore policy related to housing vouchers, challenges of local government to provide adequate housing, and data on discrimination in this area). In addition to clinical activities, guest lecturers provide insight into areas of homelessness, addiction and incarceration throughout the course.

Results (anticipated):

IRB pending for qualitative study focusing on student attitudes and readiness to serve an underserved patient population. Prelim data will be available by June 2019.

Conclusions/Limitations/Next Steps:

The elective has had additional effects of creating community surrounding the topics of social justice related to our patients among the Hospitalist doctors, PAs, and office managers which we hope to formalize through continued learning.

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SC31

Teaching the Teachers: A Mixed-methods Evaluation of a Novel RAT Curriculum

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Goals/Objectives:

To assess learning outcomes of a five-session Resident as Teacher (RAT) intervention and characterize effective elements of RAT programs from a resident perspective.

Background/Relevance of Study:

While RAT programs have been shown to improve resident teaching skills and are both ACGME and LCME requirements, they remain variable in adoption, implementation, and assessment. Optimal content and structure of effective RAT programs remain unclear.

Design/Methods:

Eighty-three senior residents (PGY2/3) participated in five sessions: team organization, direct observation and feedback, teaching on-the-fly, procedures, and leadership. Using a retrospective pre/post design, residents were asked to indicate their comfort with, confidence in, and likelihood of using curricular content. Quantitative data (mean ratings) were analyzed using paired t-tests and repeated measures ANOVA to compare mean ratings before and after each session and by training level. Qualitative data (responses to open-ended questions) were analyzed using grounded theory to identify themes and codes.

Results:

Statistically significant increases occurred in residents' self-recognition as ward leaders and comfort, confidence, and likelihood scores across all sessions. Statistically significant interactions between pre/post change scores and training level emerged for the team organization and procedures sessions, with PGY2s reporting more improvement from pre- to post-session in their comfort and confidence levels, respectively. Residents' views of what made for effective sessions focused on interactivity (using discussion, role play, and media), sharing knowledge between colleagues, and providing structured approaches to teaching strategies. Time constraints, developing high-fidelity scenarios, and aligning session content to real-life experiences were identified challenges. Residents planned to incorporate strategies for delivery of timely and specific feedback, micro skills, and engaging learners into daily practice.

Conclusions/Limitations/Next Steps:

Study results reinforce previously reported benefits of RAT curricula to internal medicine resident teaching skills and behaviors. Qualitative comments indicate that studied residents are active learners who particularly value their colleagues' contributions. Frameworks for provision of feedback, increasing pedagogical rigor, and building effective learning environments were highly applicable to resident work. A single institutional design with self-reported outcomes limited study generalizability and outcome validity. Future directions will incorporate OSCE data and direct observation of resident teaching to assess effectiveness and durability of this educational intervention.

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The Lifelong Learner's Design Challenge: Creating the Educators of Tomorrow Through Curriculum Innovation in the Emergency Medicine Sub-Internship

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Background: Modern medical practice is marked by rapid innovation and physicians need the skills to both learn and disseminate new material effectively. Emergency Medicine (EM) is at the forefront of educational innovation at the post-graduate level through Free Open Access Medical education (FOAMed). As such, we are uniquely positioned to re-evaluate the role of curriculum in preparing medical students for the future careers they face. We posit that tools to teach lifelong learning skills can be designed and implemented effectively within our EM sub-internship.

Design/Methods: The Design Challenge is an innovative final project for medical students completing their EM sub-internship. Students work in groups to create interactive web-based FOAMed projects on focused EM-relevant topics. The Challenge incorporates the utilization of both FOAMed and primary literature to help students practice micro-learning, team-based learning, self-learning loops, cognitive reboots, become involved in a learning network, learn how to leverage technology for better learning and teach peers to further their own learning. All participants retain lifetime access to this growing repository of learning. The Design Challenge is unique in that the process not only teaches students Lifelong Learning skills, but provides a full, immersive experience into the world of FOAMed and the practice of Lifelong Learning.

Results: Over multiple years, the Design Challenge has been well received by students completing our Sub-Internship in Emergency Medicine, with over 70% of respondents feeling favorably about the project. Approximately 250 students have participated in some form of the Design Challenge from 2015-2018. Many students choose core EM topics to explore further. Based upon Exit Survey feedback, the goals and objectives have been honed into our current final product which students consider both unique and beneficial to their learning and development.

Conclusions: As educators, we must challenge ourselves to give our students the tools to teach and innovate at the forefront of medicine. The Design Challenge has become the seed upon which a larger formal curriculum in Lifelong Learning is developing within our sub-internship.

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A Shared Practice: Piloting a Mindfulness-Meditation Workshop for Medical Students, Patients, and Caregivers Sitting Together in Illness and in Health

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Goals/Background/Relevance: Empathy is essential to the doctor-patient relationship. Yet, empathy decreases among healthcare providers over the course of their training (1-2). Mindfulness-meditation – a practice of present moment awareness, with an emphasis on non-judgment (3) – improves patients’ and caregivers’ well-being (4-5), and may increase empathy in health care providers, including medical students (6-8). However, data are limited in medical settings; particularly, there are no reports of students and patients practicing mindfulness-meditation together. We sought to determine the feasibility of a mindfulness-meditation program for medical students, palliative care patients, and caregivers, to practice together in a shared space.

Design: A medical student/certified yoga instructor led six weekly, hour-long, cost-free workshops teaching mindfulness-meditation skills, including guided imagery, body-scans/guided relaxation, and breathing exercises. Sessions were held in a conference room adjacent to the oncology infusion center waiting room. Patients and caregivers were informed about the workshop by palliative care providers and hospital-approved flyers. Participants included self-selecting medical students, palliative care patients, and caregivers, welcome to join for any length of time during the hour each week. Before and after each guided meditation, participants were asked to say one word about how they were feeling in that moment.

Results: An average of 6.8 participants attended each session (range 5 – 10). Specifically, weekly average numbers of sub-category participants were: 2 medical students; 3 patients; and 1.5 caregivers. Two patients attended five of six consecutive sessions; other participants were different each week. Participant responses revealed a stark contrast between pre-meditation – *stressed, overwhelmed, sad, tired, worried* – to post-meditation, *relaxed, calm, happy, grateful, self-aware*.

Conclusions/Limitations/Next Steps: This project demonstrated feasibility of a mindfulness-meditation intervention for students, patients, and caregivers. Although sample size was small, and formalized data were not collected, participants responded with self-described benefit. Next steps would ideally be to measure effects of such an intervention through an IRB-approved pre/post-study, using validated scales, as well as qualitative data. Incorporating contemplative/meditative practices in medical education could cultivate increased levels of humanism, empathy and connectedness, improve patient care, and promote mutual well-being for providers and patients.

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The Feasibility of Introducing a Wellness Curriculum into a Pulmonary and Critical Care Medicine Fellowship Training Program

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Rationale: Burnout, an increasingly recognized problem among Pulmonary and Critical Care Medicine (PCCM) physicians, if unaddressed, can lead to significant health consequences – both physical and emotional - for medical providers. This ultimately impacts the quality of patient care. Well-being is not merely the absence of burnout. A large component of well-being amongst trainees is related to self-care. Self-care is multidimensional as it relates to adequate sleep, nutrition, exercise and emotional well-being. We introduced a pilot wellness curriculum (WC) utilizing a social worker (SW) who moderated Facilitated Discussions (FD) among PCCM fellowship trainees at a single institution.

Methods: We performed pre and post-curriculum anonymous surveys to elicit attitudes and identify barriers to self-care practices at a single institution PCCM fellowship training program with 15 trainees. Following the baseline survey, we developed a WC and introduced weekly one hour wellness sessions for 8 months utilizing a structured format for FD with the designated SW. Attendance was voluntary. Healthy snacks were provided. Topics for FD included: empathy, mindfulness, gratitude, self-compassion, burnout, meaning in work, positive psychology, sustainable wellness, stress management, grounding, constructive communication, resilience, long term wellbeing and goal setting among others.

Results: Survey response rate was > 90% both pre- and post-curriculum amongst the 15 trainees. Attendance was variable with an average of four attendees per session. The post-curriculum survey revealed a 16% increase in the number of fellows engaging in self-care activities including implementing mindfulness practice. There was a 23% increase in trainees feeling recognized for their contributions. A 12% decrease in number of trainees expressing work related stress was noted. There was no change in number of trainees noting satisfaction with work-life balance and in finding work meaningful. The biggest barrier to attending wellness sessions was related to time (including patient care responsibilities, heavy clinical rotation and personal responsibilities).

Conclusions: An introduction to WC amongst PCCM fellowship trainees via FD moderated by a SW is feasible. While time commitment remains a significant barrier to attendance, following such a curriculum there were positive trends seen in trainee's buy-in towards selfcare practices and work-related stress.