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The Emergency Medicine On-Apprent Appointing Guide
 How to Use the On-Apprent Appointing Guide to Assess and Improve Resident Performance
 A Guide for the 2018 Accreditation Cycle
 The Accreditation Council for Graduate Medical Education (ACGME) and the American Board of Emergency Medicine (ABEM) have developed this guide to help emergency medicine residents and their supervisors understand the requirements for the 2018 accreditation cycle. The guide provides a comprehensive overview of the ACGME and ABEM standards, and offers practical advice on how to use the On-Apprent Appointing Guide to assess and improve resident performance.

How to Use the On-Apprent Appointing Guide
 The On-Apprent Appointing Guide is a tool used to assess and improve resident performance. It is designed to be used by supervisors and residents alike. The guide provides a comprehensive overview of the ACGME and ABEM standards, and offers practical advice on how to use the On-Apprent Appointing Guide to assess and improve resident performance.

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may help facilitate automatic pervasive real-time tracking of resident progress, identifying competency-based developmental progression or deficits and allowing for early initiation of tailored educational interventions. Automation also provides an opportunity to include novel data streams, such as clinical documentation, in tracking resident progression.

6 Using the ACGME’s CLER Pathways to Excellence Framework in Assessing Residency Competency in a Patient Safety Curriculum

Spillane L, Marks L, Pasternack J, Lowy R, Nobay F, / University of Rochester, Rochester, New York

Background: The ACGME CLER Pathways to Excellence has created well-defined priorities for a culture of patient safety which include: reporting, education, creation of a supporting culture, resident experience, and monitoring of engagement in safety practices. Procedural sedation in the pediatric population is a high-risk situation with myriad potential safety issues. Many adverse outcomes can be mitigated by following pre-procedure protocols, and by participating in event reporting systems (ERS) to prevent future mishap.

Educational Objectives: To assess resident’s retention of our patient safety curriculum, using the ACGME Pathways to Excellence framework in Safety, in the setting of a high-risk pediatric procedure.

Curricular Design: The annual competency assessment for EM residents included a simulated patient encounter requiring procedural sedation for a child. The residents were handed a syringe containing 10 times the weight-based ordered dose along with the empty drug vial. Residents were observed for adherence to patient safety practices including; appropriate equipment/room preparation, medication time-out, procedural time out, and response to airway compromise during the event. Following the simulation, residents were asked to log an error/near miss report in the institutional on-line ERS. The quality of these reports was evaluated for accuracy of event description, ability to identify contributing factors, and inclusion of suggestions to prevent future occurrences.

Impact/Effectiveness: The annual competency assessment for EM residents included a simulated patient encounter requiring procedural sedation for a child. The residents were handed a syringe containing 10 times the weight-based ordered dose along with the empty drug vial. Residents were observed for adherence to patient safety practices including; appropriate equipment/room preparation, medication time-out, procedural time out, and response to airway compromise during the event. Following the simulation, residents were asked to log an error/near miss report in the institutional on-line ERS. The quality of these reports was evaluated for accuracy of event description, ability to identify contributing factors, and inclusion of suggestions to prevent

5 Tracking Resident Cognitive Maturation with Natural Language Processing

Lui A, Chary M, Yoneda N, Parikh S, /New York Presbyterian Queens, Flushing, New York

Background: Cognitive maturation, the development of the ability to manage patients independently, is an important goal of graduate medical education. In contrast to assessments of procedural competency or knowledge base, there is no structured transparent scalable way to track the cognitive maturation of residents. An important component of residency training is the solicitation of evaluations by attending physicians to gauge a resident’s performance and provide actionable feedback. These evaluations provide insight into cognitive maturation, but their analysis is time-consuming and subjective.

Educational Objectives: We developed software to analyze freetext evaluations of residents that attendings conducted after each clinical shift in the Emergency Department. The software uses natural language processing to automatically identify areas for improvement or commendation, based on milestones set by the Accreditation Council for Graduate Medical Education and American Board of Emergency Medicine. Our underlying conceptual hypothesis is that linguistic markers track the development of medical decision making, which we term cognitive maturation. The software is written in Python and freely available, with extensive documentation, on GitHub.

Curricular Design: In this proof-of concept study we simulated faculty evaluations from 100 residents over the course of one year. The resident performance was created from four archetypes, the rock star, the late bloomer, the laggard, and the work horse. The tone of the faculty evaluation was created from four faculty archetypes: laconic, effusive, disapproving, or diligent. It correctly identified 22/25 notes where the “laggard” archetype predominated.

Impact/Effectiveness: Ours is the first demonstration of natural language processing to use faculty evaluations to track the cognitive maturation of residents. This innovation

future occurrences.

Results: Six of twenty (6/20) teams failed to follow standardized safety procedures, which resulted in a potentially life-threatening medication error. One team failed to identify the medication dosing error despite patient decompensation. Interestingly, though 19/20 teams eventually knew about the medication error or near miss, only 63% of all residents chose to report the significant medication error/near miss in ERS. Most residents who reported the error demonstrated insight into how the identified error occurred; however, 65% of residents failed to offer any suggestions for mitigating future errors. Using the CLER pathway to excellence framework in safety, this assessment highlights educational gaps in Pediatric Procedural Sedation. Our patient safety curriculum will be modified to help residents recognize errors/near misses and act to prevent future error.

Best of the Best Research Oral Presentations

1 Assessment of Accountability and Professionalism Competencies by Emergency Medicine Residency Programs

C Stehman, Domingues R, Fernandez-Frackelton M, Hochman S, Love J, Santikul D, Shah K, Soares W, Volz E, /Indiana University School of Medicine, Indianapolis, IN; NYC Health and Hospital, New York, New York; Harbor-UCLA, Los Angeles, California; St Joseph's Regional Hospital Center, Paterson, New Jersey; Georgetown University, Washington, District of Columbia; Orange Regional Medical Center, Middletown, New York; The Mount Sinai Hospital, New York, New York; Baystate Health, Springfield, Massachusetts; LSU - Baton Rouge, Baton Rouge, Louisiana;

Background: Non-technical skills (NTS), such as professionalism and accountability, are vital to providing high quality patient care. While NTS are mandated core competencies for Emergency Medicine (EM) residents, the methods used to evaluate performance and determine NTS competency are not standardized, bringing the validity of measurements into question.

Objectives: To determine the type and frequency of methods US-based EM residencies use to assess the NTS competencies of Accountability and Professionalism, as well as how often graduating residents meet NTS competency goals.

Methods: The study group, all of whom are involved in resident education, created a cross-sectional survey exploring assessment and competency in Accountability and Professionalism. The survey was piloted and modified for content and clarity through iterative feedback from EM physicians not involved in the study. In August 2017, the final survey was sent

online to the Clinical Competency Committee (CCC) chair or Program Director of the 185 ACGME-accredited residencies. Results were summarized using descriptive statistics and parametric confidence interval estimates.

Results: 121 programs (65.4%) completed the survey. The most commonly used methods of assessment for both competencies were faculty shift evaluation (89.7%; 95% CI 85.1, 93.2), CCC opinion (86.8%; 95% CI 81.8, 90.8), and faculty summative assessment (76.4%; 95% CI 70.6, 81.6). Self-evaluation (46.7%; 95% CI 40.3, 53.2), gestalt (52.9%; 95% CI 46.4, 59.3%) and lack of complaints (36.4%; 95% CI 30.3, 42.8) were also used as assessment tools. 28.9% [95% CI (21.0, 37.9)] of programs use a formal measurement rubric to assess NTS. Only 11.2% [95% CI (6.1, 18.4)] of programs felt they are very effective at determining mastery of these competencies. Only 40.1% [95% CI (33.7, 46.7)] felt that greater than 95% met the milestone graduation goal, while 3.0% [95% CI (1.2, 6.1)] felt that less than 50% met this goal.

Conclusions: Programs rely heavily on faculty opinion, often without a formalized rubric, to determine if residents attain competency in Accountability and Professionalism. Less than half of residency programs felt that greater than 95% of their residents met the graduation goal for these competencies, suggesting a need for improvement in training and evaluation of NTS.

2 Comparison of Faculty and Nurse Assessment of Emergency Medicine Residents

A Tsyruunik, Whalen L, Goldflam K, Harrison R, Dziura J, Della-Giustina D, /Yale School of Medicine Department of Emergency Medicine, New Haven, Connecticut

Background: The Accreditation Council for Graduate Medical Education requires emergency medicine residencies to use multi-source feedback when assessing their residents' clinical competencies. Few studies have compared faculty evaluations to those of nurses.

Objectives: To assess the reliability of a nursing evaluation instrument for resident feedback, as well as to compare nursing evaluations with attending physician evaluations using the same instrument.

Methods: A retrospective analysis of 224 anonymous nursing evaluations and 623 anonymous faculty evaluations of 37 residents during 2016 was performed. Participants were asked to evaluate the resident on a five-point Likert scale on four measures: overall bedside manner, communication skills with patients, communication skills with nurses and other non-physician staff, and medical knowledge and clinical skills. They were also asked to answer yes or no to the question "would you want this resident to take care of you or a member of your family?" An intraclass correlation coefficient (ICC) and Pearson correlation coefficient (PCC) were determined for each question in order to evaluate the