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Residents as Investigators: Original Research as a Universal Standard for Scholarly Activity to Teach Evidence-Based Medicine

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those giving the presentations as for those listening. Residents are encouraged to use whatever medium of information best fits their learning style, such as: power points, Socratic discussions, videos, handouts, and pod casts. Presentations last 10-15 min each. Week three is focused on knowledge testing. Each presenter creates 3-5 questions with explanations focusing on the highlights of their individual topics. This is designed to solidify main teaching points from the previous two weeks.

Impact/Effectiveness: Simulation has become an integral part of residency training. Unfortunately, among many residency programs it is an isolated educational modality separated from a more conventional curriculum. Using the debrief model, the invaluable first hand experience gained through simulation cases is expanded and integrated into the curriculum, with residents taking charge of their education in an active and dynamic method of learning.

53 Residents as Investigators: Original Research as a Universal Standard for Scholarly Activity to Teach Evidence-Based Medicine

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Background: The Review Committee for Emergency Medicine (RC-EM) requires that all residents complete scholarly activity. This requirement facilitates their education in evidence-based medicine. The basis for modern medical education as pioneered by William Osler is practical experience. Yet, there is no stipulation specifying that this research requirement must take the form of a completed original research project; specific alternatives cited include review papers, case reports, and performance improvement projects. A recent national survey of all Emergency Medicine residency programs found no consistent interpretation and implementation of this requirement.

Educational Objectives: We sought to construct a research curriculum facilitating each resident serving as principal investigator on a single original research project as a graduation requirement. We designed an intensive didactic curriculum structured around establishing the residents as investigators on department protocols for the purpose of obtaining practical experience executing various study designs. Subsequently residents are expected to design and execute their own original research projects.

Curricular Design: The curriculum entails a two-week intensive seminar halfway through intern year comprising active resident participation in ongoing department protocols of various methodological designs (e.g., randomized controlled trial, cohort, case-control) to better understand the mechanics of executing a research protocol. To measure performance, we defined six serial milestones to track each

resident's individual research project from start to finish: (1) formulate a question with testable hypothesis; (2) develop protocol; (3) collect data; (4) analyze results; (5) prepare manuscript; (6) present and submit results for publication.

Impact/Effectiveness: The new curriculum began implementation in July 2015. Thus far, all 16 interns are on track for meeting the research milestones. In comparison to the last academic year, the number of newly submitted resident protocols to date has increased 67%, the number of abstract presentations 200%, and the number of peer-reviewed publications 150%.

54 Rethinking Airway Management Training in Emergency Medicine Residency Programs: Improving Resident Airway Skills with a Comprehensive Airway Boot Camp Course

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Background: For most residents in emergency medicine training programs, airway management skills are acquired and refined one case at a time while caring for patients in the emergency department and augmented with the obligatory off-service anesthesia rotation. Intubation experiences may differ between residents due to the variability of airway cases that present on any given day. Therefore, residents should be exposed to a standardized airway curriculum that covers core airway principals and management of difficult airway scenarios.

Educational Objectives: Improve all residents' airway management skills by providing them with an 8-hour airway course during intern orientation.

Curricular Design: The resident airway boot camp implements multiple learning modalities to engage the participants and more effectively reinforce basic and advanced airway concepts. Several interactive lectures incorporating an audience response system are augmented with hands-on breakout sessions. The hands-on training focuses on the familiarization of adult and pediatric intubation equipment and techniques, as well as airway adjuncts (i.e. bougie, extraglottic devices, video laryngoscopes and fiberoptic intubating bronchoscopes). Pig tracheas are used to realistically teach both surgical and percutaneous cricothyrotomy techniques. Finally, the residents test their newly acquired knowledge and technical skills by participating in 8 separate airway code simulations in a high fidelity simulation center.

Impact/Effectiveness: The participants (n=16) completed a survey before and after the airway boot camp, where they ranked their perceived skill level for different airway tasks. A comparison of pre and post survey results showed a statistically significant improvement in participants' perceived skill in 6 airway categories after completing the course: bag valve mask ventilation, adult endotracheal intubation,