# UC Irvine

## Western Journal of Emergency Medicine: Integrating Emergency Care with Population Health

### Title

Innovation in EM Education Design Challenge - A Western Journal of Emergency Medicine x Volume XVII, Supplement : August 2016 Novel Approach to Advance Medical Education

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**Background:** In an effort to improve resident performance on the ABEM In-Training Exam (ITE) and simultaneously increase their depth of medical knowledge, we developed a three-pronged approach to adequately prepare residents. This approach included:

1. Creation of small-group learning sessions to replace hour-long didactics. We also eliminated one hour of weekly conference time and replaced it with one hour of asynchronous learning. Half of conference time was devoted to small group sessions. The other half remained as large audience sessions, thereby preserving Grand Rounds, M&M, and joint specialty conferences such as Trauma and Critical Care.
2. Institution of a weekly one-hour focused board-review session during the five months preceding the ITE.
3. Utilization of an online database of EM board-style questions with a built-in self-assessment tool.

**Educational Objectives:** The primary focus and objective of this educational innovation was to improve the overall medical knowledge of residents while simultaneously preparing them for the annual In-training examination.

**Curricular Design:** The first part of our intervention was taking two hours of conference time and devoting them to small group learning. We divided residents into four smaller groups. Each group rotated through four 30-minute stations. Each station was led by a resident group leader who had been previously paired with a core faculty member, providing a more intimate learning experience given the smaller educator:learner ratio.

The second part of our intervention included a weekly one-hour, high-yield board preparation session instructed by core faculty. Attendance was mandatory for PGY-1s and residents on academic remediation. Attendance was optional for all other residents.

The third part of our intervention included a subscription to an online database of 2,000+ board-style questions. Residents individually completed these questions as part of asynchronous learning. The database included self-assessment tools, which utilized personal statistics to identify individual strengths and weaknesses.

**Impact/Effectiveness:** Implementation of this three-pronged strategy led to significant improvement of ITE scores from 2014 to 2015. In 2014, residents were substantially below the national average. Whereas in 2015, resident scores improved significantly and class averages were substantially above the mean. Our PGY-1 mean score increased by 9 points, moving this group from 3 points below the national mean to 6 points above the national mean. Our PGY-2 mean score increased by 5 points, moving this group from 2 points below the national mean to 3 points above the national mean. Our PGY-3 mean score increased by 3 points, moving this group from 2 points below the national mean to 1 point above the national mean. As supported by the data above, implementation of this three-pronged strategy was successful in improving ITE scores and overall improving resident medical knowledge.

## 36 Improving Emergency Medicine Residency Documentation Training: A Needs Assessment

*Schnapp B*, Sanders S, Ford W /Northwestern University, Chicago, IL; Northwestern University, Chicago, IL; Northwestern University, Chicago, IL

**Background:** The medical record is complex, serving to communicate to other providers, bill for services and mitigate medicolegal risk. Emergency medicine (EM) program directors and residents agree that documentation skills are often not taught well during residency. However, the areas of documentation that residents feel most lacking in are not known.

**Educational Objectives:** To identify perceived areas of need in documentation education using a cohort of junior emergency medicine residents.

**Curricular Design:** An anonymous survey was developed by medical education faculty, edited for content validity by an online cohort of medical educators, piloted on the target audience for relevance and clarity and then emailed to PGY1 and PGY2 residents. Junior residents were felt to be most likely to have knowledge gaps regarding documentation. Survey assessed self-reported competency in documentation for communication with other providers, billing, and medicolegal reasons, attitudes towards documentation, barriers to effective documentation, as well as previous education and interest in further education on documentation. A 5-point Likert scale was used to record answers.

**Impact/Effectiveness:** The response rate was 83% (25 of 30). Attitudes toward documentation education were very favorable, with 96% of respondents somewhat or strongly interested in learning more. Residents felt weakest about their knowledge of how to chart to protect themselves medicolegally, with only 16% somewhat or completely agreeing that they know what to include. They felt best about documenting to communicate with other providers, with 50% of respondents somewhat or completely agreeing that other providers could understand the patient's emergency room course by reviewing the chart. The next step will be to create a curriculum that fills these gaps which can be utilized by EM programs across the country to improve residents' knowledge and efficacy with documentation.

## 37 Innovation in EM Education Design Challenge - A Novel Approach to Advance Medical Education

*St George J*, Rich J, Won J /Weill Cornell Medical College, New York, NY

**Background:** The 21st century is defined by increasingly rapid cycles of change not just in technology, but in education and medical knowledge. This "disruptive" process brings

opportunity and risk: accelerated change is an occasion to reimagine how we teach. It also strains the limits of our traditional didactic structures and challenges medical educators and institutions alike to keep pace. This rapidly expanding space between new opportunities and the pace at which current educators and institutions are able to implement them is what we call the "education gap."

**Educational Objectives:** For medical education to remain engaging and relevant we must address this gap. To do this requires expanding our conception of what is an educational tool, and integrating new structures within our institutions that provide ongoing access to this 21st century zeitgeist. Our objective was to develop a educational tool (the design challenge) to integrate new technology, engage residents and faculty, promote collaborative projects and mentorship , and provide an formal system for the residency program to keep pace with new tools and educational opportunities.

**Curricular Design:** Here we present our experience with the implementation of a Design Challenge model.

Participants were introduced to concepts for effective learning, asked to identify barriers to their learning, and then challenged to overcome them during the 8 hour design challenge. Participants were introduced to collaborative social media platforms as well as novel tools that could be harnessed for education and then divided into small groups. At the end of the day, each group's work was uploaded to our social platform and presented.

**Impact/Effectiveness:** Feedback from the day suggested that this was a powerful tool for medical education: it empowered participants to actively engage in their own learning, revealed an untapped reserve of potential talent among our residents to be educators, and laid the groundwork for iterative student and resident-driven change within our program. Since the design challenge multiple resident driven and student research projects and content development have been initiated. Several conference and education days have highlighted work that was created as a direct result of our design challenge. This appears to have had a significant impact on our program's educational direction.




**Figure 1.**

## 38 Interactive Video-assisted Procedural Curriculum for Uncommon Emergency Medicine Procedures

*Gorbatkin C*, Bothwell J, Walsh R/Madigan Army Medical Center, Tacoma, WA

**Background:** Procedural competence is required in the management of uncommon conditions in the emergency department, and mastery of these skills is essential in the practice of Emergency Medicine.

**Educational Objectives:** We developed a weekly interactive and video-based curriculum to hone uncommonly utilized procedural skills for our program of 36 emergency medicine residents. Objectives includes procedural competence for essential emergency medicine procedures, as well as competence in interactive medical education for resident instructors.

**Curricular Design:** First, we performed a needs assessment by polling our faculty physicians as well as emergency medicine residents to determine which uncommon procedures required additional training in our program. Examples of procedures included pediatric jet ventilation, perimortem cesarean delivery, transvenous pacing, advanced airway techniques, regional nerve blocks, fracture reductions, and penile injection and aspiration for priapism. After the needs assessment, we searched for the highest yield instructional videos of each procedure. We developed a 52 week procedural curriculum. Second-year residents with attending physician mentors were assigned as lead instructors for each weekly 30 minute procedural morning report. Lead instructors guide the learners through the selected video. Selected videos include those from academic faculty around the country, Youtube.com, NEJM, or other online resources. Each resident learner then performs the procedure on mannequins or tissue models.

**Impact/Effectiveness:** The procedural morning report curriculum has enabled our program to further hone more than 50 uncommon procedural skills that are essential to the practice of emergency medicine. This enables residents and rotating learners to gain hands-on competence in these essential procedures. The 52-week curriculum receives excellent reviews from learners, and we utilize surveys to continuously review and improve the procedural curriculum.

## 39 Invasive Procedure Team Contributes to Procedural Mastery in a Combined Residency

*Ramnarine M*, Gong J, Gupta S, Marcus D, Mukherji P/ North Shore LIJ Medical Center, East Meadow, NY

**Background:** Combined Emergency/Internal/Critical Care Medicine (EM/IM/CC) residents occupy a unique niche