

## **UC Irvine**

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#### **Title**

Effect of a QR-code linked mental model posted in resuscitation rooms to promote real-time performance feedback

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residents were assigned a chief complaint based patient encounter and the 360-degree assessment was used as the evaluation tool.

**Objective:** The objective was to assess the resident's perceptions and number of completed 360 evaluations after the introduction of DOTS. We hypothesize that the implementation of DOTS will increase the number of 360-degree evaluations completed by EM residents. The second objective was to use direct observation to engage the supervising physician in creating educational opportunities and timely feedback.

**Curricular Design:** Over a 12-week period, residents that were scheduled to the EM rotation were assigned DOTS paired with a designated faculty member. Specific lower volume shifts were chosen to maximize educational opportunities. All 18 residents had the opportunity to have at least 1 DOTS. At the completion of the 12-week period, residents were surveyed on their perception of the learning experience.

**Impact/Effectiveness:** After completing the 12-week period, we saw a marked increase in the number of 360 evaluations. At least, half of the PGY 1, five out of six PGY2 and all the PGY3 had at least 2 DOTS. Most of the residents felt that they received individualized learning (83%) from the attending and benefited from the learning experience. In conclusion, the implementation of DOTS was well received by EM residents and it tripled the number of completed MSF and provided direct observation periods with feedback.

## 18 Does a Simulated Didactic Effectively Teach Emergency Medicine Residents to Perform a Cervical Exam in Laboring Women, and Does it Affect Their Future Practice in Managing These Patients?

*Eleanor Aluise, MD; Angela Chen, MD*

### Learning Objectives:

We aim to augment the knowledge and physical exam skills of emergency medicine residents surrounding the laboring cervical exam using lecture material and simulated practice.

### Abstract:

**Introduction:** The cervical exam in laboring women is an essential skill for emergency medicine residents, particularly for community-bound doctors without in-house obstetrics. We did a needs assessment of residents in our program and found that many felt unsure in the exam and disposition of laboring women despite rotating on the labor and delivery service.

**Educational Objectives:** We aim to augment the knowledge and physical exam skills of emergency medicine residents surrounding the laboring cervical exam using lecture material and simulated practice.

**Curricular Design:** We designed a two-pronged educational model including a traditional slide-based lecture and a simulated teaching session. All participating residents received the lecture. A subset also received the simulated teaching session using the PROMPT Flex Cervical Dilatation and Effacement Model. While simulation-based teaching is well established in our residency, simulation of the laboring cervical exam is a new approach to this topic. All participants completed pre- and post- surveys which assessed both their knowledge of the material as well as their confidence in managing these patients.

**Impact:** Pre-survey results of 78 participants (out of 96 in the residency, or 81.3%) were collected. 83.4% rate their confidence in their laboring cervical exam as a 1 or 2 out of 5. These findings are consistent with our initial needs-based assessment.

Post-survey results continue to be collected as more residents participate in the project. Preliminary outcomes demonstrate an appreciable increase in confidence. 50.0% of lecture-only respondents rate their confidence in their laboring cervical exam as a 1 or 2 out of 5, and none of those who received the sim session do.

If trends continue, we hope to see this is an effective way to teach this topic. If so, we hope to continue offering effective supplementary teaching for our residents to augment their established experience with the laboring cervical exam.

## 19 Effect of a QR-code linked mental model posted in resuscitation rooms to promote real-time performance feedback.

*Aleksandr Tichter, MD; Adianes Feliciano, MD*

### Learning Objectives:

To increase the frequency feedback delivered during emergency department shifts.

To provide clinical supervisors with a simple and reliable framework to give feedback of high quality and utility.

### Abstract:

**Curricular Design:** An online feedback form was developed using a mental model for the primary and secondary surveys of patients presenting to the emergency department with traumatic injuries. A QR-code which linked to the form was posted in each of 5 resuscitation rooms as well as the physician workstation. Faculty and residents were provided education related to the purpose and content of the form via email and direct communication prior to implementation, as well as intermittently thereafter. Supervisors were encouraged to scan and fill out the form together with learners as soon as the trauma assessment was complete and the patient was stabilized.

**Impact/ Effectiveness:** Over the course of 4 months, 36

distinct episodes of feedback were logged using the online form: 9 by emergency medicine faculty, and 27 by senior-level residents. The learner targets included 30 interns and 6 senior-level residents. The feedback scenarios included 4 “Code-1” (high acuity), 2 “Code-2” (medium acuity), and 30 “Code 3” (low acuity) trauma resuscitations. The initial implementation of this innovation was successful in encouraging feedback and providing a favorable, objective framework to provide it. The feedback log suggests more initial enthusiasm for and engagement with the innovation among residents than faculty. Future plans include more targeted education for the physician faculty, and mapping the feedback form to ACGME Milestones for use by the Clinical Competency Committee as a data point to inform milestone assignments. Additionally, for proof-of-concept, this pilot project focused exclusively on trauma resuscitations, but will be expanded to include a pre-identified series of discrete observable behaviors (i.e., providing discharge instructions, calling a consultant, performing a procedure).

## 20 Effectiveness of Simulation-Based Mastery Learning Curriculum for Tube Thoracostomy in Emergency Medicine (EM) Residents

Max Berger, MD; Laura Weber, MD; Janice Shin-Kim, MD; Jessica Leifer, MD; Soma Pathak, MD; Shannon McNamara, MD

### Learning Objectives/Educational Objectives:

1. Diagnose pneumo- and hemothorax on chest x-ray and ultrasound
2. Confidently and competently place a chest tube using sterile technique

### Abstract:

**Introduction/Background:** For rare, high-risk procedures in EM, simulation is an ideal modality to supplement clinical training. Simulation allows for deliberate practice of procedural skills without concern for patient harm. Simulation-based mastery learning is the gold standard for procedure training, and has been used to successfully train residents in a variety of procedures.

**Curricular Design:** We developed a simulation-based mastery learning course for tube thoracostomy to train residents at our institution. The course consists of independent pre-work followed by a 2-hour hands-on session. The rubric used for assessing competence was based on the published, validated TUBE-iCOMPT checklist. The in-person session consists of 1) baseline assessment; 2) deliberate practice on individual aspects of the procedure; 3) final assessment. If a minimum passing score is not achieved, additional coaching and practice occur until the learner achieves the minimum passing score.

**Impact/Effectiveness:** 23 PGY-2 residents have completed the course. There was a statistically significant

increase in learners’ modified TUBE-iCOMPT score out of 79 points (pretest M=60.04, SD=8.35 to posttest M=74.26, SD=4.68,  $p<0.001$ ). Learners’ confidence in their ability to correctly place a chest tube also increased on scale from 1 to 10 (precourse M=4.38, SD=1.95 to postcourse M=7.78, SD=0.95). Our course was well received by learners and effective in improving their directly observed procedural skills in simulation. A next step will be to assess outcomes data to see if our course has any effect on complications rates for chest tubes placed at our institution. We are also implementing a similar course for pigtail catheter placement.

## 21 Emergency Medicine Clerkship Curricular Revision Using a Targeted Needs Assessment

David Wald, DO

**Learning Objectives:** Our objective was to perform a curriculum renewal for our EM clerkship using a targeted needs assessment.

### Abstract:

Prior updates of our EM clerkship curriculum have been based largely on perceived need. A review of the published national curriculum set the groundwork for a formal approach to curriculum renewal using a targeted needs assessment. We felt this approach would provide us with valuable information as we moved forward with the curriculum renewal process.

A two part targeted needs assessment was developed. We first surveyed stakeholders; chief residents, clerkship and residency leadership to identify concepts, complaints, procedures / tasks, conditions and clinical decision rules perceived as important for all students to be exposed to during their required 4 week EM rotation. Responses were reviewed to identify patterns. A follow up needs assessment was distributed to a larger group of faculty, residents and students. This prioritized response options based on perceived level of importance; very, somewhat or less important.

All (n-14) participants responded to the initial survey. Data obtained populated responses for the follow up survey. Fifty three (87%, n-61) responded to the follow up needs assessment. Four key concepts were felt to be “Very Important” to emphasize during the clerkship; approach to the undifferentiated patient, performing a focused H&P, recognizing “Red Flag” symptoms, sick vs. not sick. These are now a focal point of discussion during orientation. Four complaints were felt to be “Very Important”; abdominal pain, altered mental status, chest pain and shortness of breath. These are incorporated into didactic cases used during the clerkship. Additional cases have been developed to reflect the importance of conditions identified through the needs assessment. Key clinical decision rules have been