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Teaching Video and Hands on Learning Improve Slit Lamp Exam Workshop

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Authors

Mason, Jessica
Najarian, Sandra

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Figure 2.

62 Teaching the Teachers of Point-Of-Care Ultrasound (POCUS): Creating a Checklist for an Objective Structured Teaching Examination (OSTE) for Instructors of the Focused Assessment with Sonography for Trauma (FAST) Exam

Sanders S, Byrne E, Baran E/Northwestern University, Chicago, IL

Background: Competency in POCUS is required by the Residency Review Committee for multiple medical specialties not just limited to Emergency Medicine. As ultrasound use increases there is a need to ensure that senior residents and faculty are adept at instructing novice learners in POCUS. OSTEs focus on the teaching skills of residents and faculty and have been utilized to evaluate and enhance clinical teaching. There is a lack of literature detailing OSTE use in teaching procedures like POCUS.

Educational Objectives: We sought to create an OSTE checklist that could be used to evaluate an instructor teaching a FAST exam to a novice ultrasound learner. This OSTE is the basis for creating a curriculum for the instructor and evaluating the effectiveness of teaching the teachers of POCUS.

Curricular Design: A panel of faculty from our institution with both POCUS and medical education expertise created a preliminary OSTE checklist after reviewing the literature. The checklist was organized into three parts: short didactics, hands-on scanning and overall learning climate. We conducted a cross-sectional survey which was IRB exempt. We sent the draft checklist to a convenience sample of ultrasound directors for review. We asked specifically, “Is each particular point/item important for a FAST teacher to perform when instructing a novice ultrasound learner?” and the results were recorded in a binary fashion.

Impact/Effectiveness: The checklist was reviewed by 13 US directors nationally. A cutoff of 75% of respondents scoring the item as YES/KEEP was used to determine whether individual items should be kept or dropped. The final OSTE checklist reflects a total of 29 items out of the original 33 draft items (Table 1). Creation of a FAST OSTE will facilitate the development and evaluation of curriculum specifically designed for the instructors of POCUS starting with the core application of the FAST exam.



POCUS: OSTE Checklist for the FAST Exam

| Didactics | Keep | Discard | Hands-On Scanning | Keep | Discard |
|--|-------|---------|---|-------|---------|
| 1. Reviewed Basic Ultrasound Principles | | | 1. Facilitated learner's image acquisition by recognizing and correcting probe position and beam direction. | 100% | 0% |
| <ul style="list-style-type: none"> • Piezoelectric crystals send/receive sound waves converting back and forth sound/energy • Tissue appearance based on acoustic impedance (Bone high attenuator/white, Tissue medium/grey, Fluid low/black) • Two keys to resolution: Frequency (High/good resolution, Low/good penetration), Focal zone (keeping object of interest in center of screen) • Artifacts positive and negative role in the EFASST exam: enhancement (posterior to bladder, mirror/present in normal thorax) | 69.2% | 30.8% | 2. Used verbal cues to slide, rotate, fan, rock, flatten or change pressure of the probe prior to demonstrating or physically directing the learner's hand | 100% | 0% |
| 2. Reviewed Machine Knobology | | | 3. Emphasized the importance of fanning through the entire window (liver/kidney, spleen/kidney, pelvis long and transverse) to evaluate for hemoperitoneum. | 92.3% | 7.7% |
| <ul style="list-style-type: none"> • Probe selection • Frequency button and settings • Gain button and settings • Depth button and settings | 100% | 0% | 4. Instructed how to visualize above the diaphragm in the LUQ and RUQ views. | 100% | 0% |
| 3. Reviewed Orientation | | | 5. Instructed how to rotate probe when rib shadows obstruct visualization. | 92.3% | 7.7% |
| <ul style="list-style-type: none"> • Probe marker relationship to screen indicator • Tips to confirm probe marker (gel or touching one end) • Standard Longitudinal view (head/left side screen) • Standard Transverse view (patient's right/left side screen) | 100% | 0% | 6. Highlighted need to visualize inferior pole of R kidney in RUQ. | 76.9% | 23.1% |
| 4. Defined the mnemonic FAST | 84.6% | 15.4% | 7. Highlighted need to visualize entire spleen/subdiaphragmatic not just the splenorenal interface in LUQ. | 84.6% | 15.4% |
| 5. Reviewed indications for FAST exam | 100% | 0% | 8. Explained that the Trendelenburg position will improve sensitivity for detecting free fluid. | 53.8% | 46.2% |
| 6. Reviewed the limitations of FAST exam | 100% | 0% | 9. Explained that perinephric fat may appear as free fluid and the importance of comparing to opposite side. | 69.2% | 30.8% |
| 7. Reviewed the four anatomical windows for the FAST exam | 100% | 0% | | | |
| 8. Presentation was understandable and organized. | 76.9% | 23.1% | | | |
| | | | Learning Climate | | |
| | | | 1. Actively sought questions from the learner. | 92.3% | 7.7% |
| | | | 2. Probed the learner with questions to gauge understanding. | 100% | 0% |
| | | | 3. Offered specific positive feedback. | 84.6% | 15.4% |
| | | | 4. Offered specific corrective feedback. | 100% | 0% |
| | | | 5. Created a comfortable/safe learning environment. | 76.9% | 23.1% |
| | | | 6. Summarized key teaching points from the encounter. | 92.3% | 7.7% |

Figure 1.

63 Teaching Video and Hands on Learning Improve Slit Lamp Exam Workshop

Mason J, Najarian S/MetroHealth Medical Center, Cleveland, OH

Background: Learning through multimedia can fill gaps in less commonly performed procedures and clinical exam skills. 4th year medical students (MS4's) and interns are generally uncomfortable and not proficient with slit lamp exams (SLEs). A concise video presentation that can be watched prior to an educational workshop, and also available for review on shift improves the provider's comfort and proficiency in performing a SLE. This model incorporates video learning, interactivity, practice, and repetition, which have been shown in prior studies to improve learning outcomes.

Educational Objectives: To create a concise video presentation teaching how to perform a SLE.

To show this video immediately prior to a hands-on workshop.

To make this video available for independent review and on shift.

To evaluate the effectiveness of the video and workshop.

Curricular Design: A slit lamp exam workshop is held for new interns during their orientation, and for MS4's during their visiting rotation. A 3 minute video is shown first, followed by a hands-on workshop with an instructor present. This video is then available online for independent review. Students and residents are given a pre and post-test to assess content knowledge, and a pre and post-survey of their feedback on the experience.

Impact/Effectiveness: The SLE video and workshop are an example of an educational model that incorporates multimedia. Clinical skills can be taught through media, followed by a hands-on experience, with the media available for review at the learner's discretion. Concise teaching videos can be accessed on shift for quick review immediately prior to using these skills.

Summary of data:

- Mean scores increased from pre-test to post-test from 5.86/10 to 8.79/10.
- Learners felt more comfortable performing a SLE, evaluating eye complaints, and troubleshooting the slit lamp after the workshop and video.
- Learners found the video helpful, with useful content and appropriate length.
- Learners stated they would be likely to access the video on shift.
- 100% of participants replied that the video was helpful, and that content and length were appropriate.
- This SLE teaching video can be shared with other programs. More importantly, this educational model can potentially improve clinical skills in medical education.

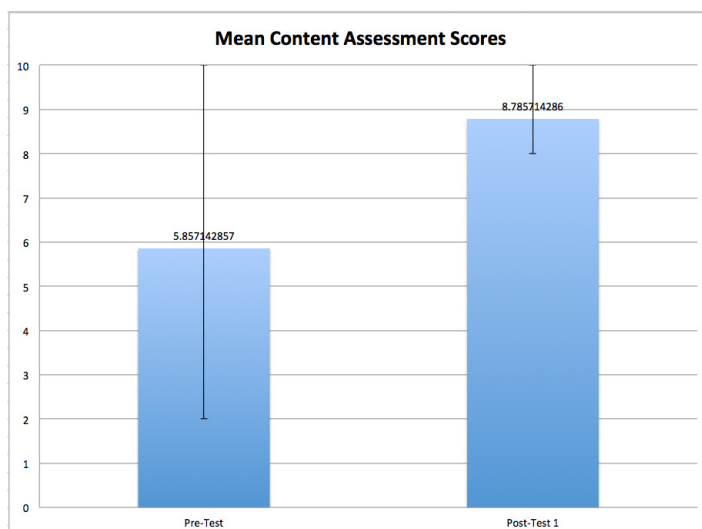


Figure 1. Mean Content Assessment Scores.

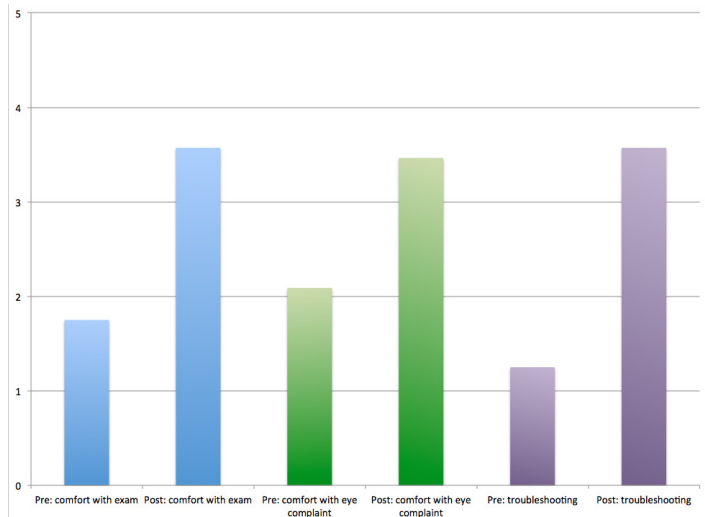


Figure 2. Pre and Post Survey.

64 The ABCs of Empathy

Chinai S, Bird S, Boudreaux E/University of Massachusetts, Worcester, MA

Background: Empathy is declining amongst healthcare providers despite the delivery of compassionate care being an important core tenet to the practice of medicine. The reasons for empathy decline are multifactorial, however one particular variable has significant implications for empathy: burnout. There is a need to increase empathy both for patients and for providers; however an educational model to teach these skills does not exist to our knowledge. This innovative curriculum is the intervention for a prospective randomized controlled study.

Educational Objectives:

1. Increase empathy
2. Decrease burnout

Curricular Design: The ABCs of Empathy is a multi-modal educational approach to increase empathy and reduce burnout designed for EM residents. It is focused on mindfulness, patient-centered communication and reflection. The ABCs represent Awareness, Breathe and Be Present and Care. This mnemonic embodies an easy way to incorporate empathy both for the provider and for the patient in every encounter. It was delivered to the intervention group of residents on 2/11/15 and 2/18/15 from 10a-12p. Components of the curriculum included personalized empathy measure report based on their patients' feedback, empathy powerpoint, standardized patient encounters, reflective writing exercise with appreciative inquiry, what are you thinking/feeling exercise, practice making empathetic statements, and discussion of positive ED patient experiences.

Impact/Effectiveness: 10 intervention group residents completed evaluations about the curriculum. They were asked to rate their satisfaction level with the individual components