

MP19**Creation and implementation of an educational emergency medicine clinical handbook**

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Innovation Concept: Medical students often face challenges when entering clerkship. The abundance of teaching tools and online resources make it difficult for learners to navigate and apply knowledge in a clinical setting. Although valuable study aids exist across Emergency Medicine (EM) clerkship curriculums, a convenient resource tailored to junior learners for on-shift use is lacking. We created an academic resource with the intent of assessing student engagement with the handbook. **Methods:** Ottawa's Clerkship Guide to Emergency Medicine was developed using information from a commonly used EM textbook and relevant literature. After a comprehensive peer-review by staff EM physicians, the resource was published online and made available to learners in March 2018. To assess utility of this resource, a national survey was administered followed by a Likert-type analysis. Website metrics and the survey results were used to guide a sustainable model for annual student-driven resource updates. **Curriculum, Tool or Material:** The handbook contains high-yield EM topics organized into one-page summaries. The main sections include resuscitation, symptoms-based approach, and medical emergencies. Students can access the handbook online, via mobile app, or use a printable version. Over 7300 unique downloads have occurred since launch. Our national survey revealed that of the total respondents (N = 171, 93.6% 3rd-year clerks, 31.6% uOttawa students), 97.1% (n = 166) had used the handbook on shift. A majority were able to find an answer to their clinical question either fully (53%, n = 88) or partially (46.4%, n = 77) and many would recommend this resource as-is (62.7%, n = 104) or with some modifications (34.3%, n = 57). Compared to the student's preferred clinical resource, mean Likert-type scores showed a significant ($p < 0.01$) positive difference in favor of the handbook regarding themes of organization (3.83 vs. 4.38), length (3.43 vs. 4.76) and ease in accessibility (3.46 vs. 4.79). **Conclusion:** The value of this handbook for junior learners entering their acute care rotation is evident. We demonstrated that student uptake of this handbook was robust. Compared to commonly used resources, students felt this handbook was more organized, concise in length, and easy to integrate into their clinical workflow. Implementation of this handbook across Canadian EM curriculums may bridge the EM knowledge gap in junior learners and off-service residents.

Keywords: clinical handbook, innovations in EM education, study guide

MP20**Resuscitative thoracotomy: development of a video curriculum to teach a rare procedure**

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Innovation Concept: Resuscitative thoracotomy (RT) is a life-saving procedure in select trauma patients. However, RT is infrequently performed, limiting trainee exposure. In a survey of American training programs, graduating residents had performed an average of 3 RTs. There is no published data regarding the number of RTs observed and performed by Canadian trainees. We theorized that RT procedural exposure and comfort level would be low in emergency medicine

(EM) trainees at our institution due to lack of exposure. Thus, we aimed to create a first person procedural video using local resources to teach RT. **Methods:** We first created a needs assessment survey conducted within Western University Division of Emergency Medicine over two months in 2018. Senior residents observed an average of 1.5 RT procedures and participated in an average of 0.6. Furthermore, 88% of senior residents cited a lack of confidence in their ability to perform this procedure and 87% indicated an instructional video would be a valuable educational tool. We created a video described in detail below. Prior to video distribution a survey was distributed asking respondents to list the critical steps in performing an RT. Participants were then asked to view the video and complete the survey again. Responses were scored by two independent reviewers.

Curriculum, Tool or Material: An immersive cadaveric simulation video was developed in collaboration with a trauma surgeon at our institution. The video reviewed our thoracotomy tray, RT indications/contraindications, and demonstrated a narrated first-person RT on a floppy embalmed cadaver. Potential difficulties encountered during the procedure are highlighted throughout the video with troubleshooting tips suggested. **Conclusion:** We had 46 survey respondents from our division (25 residents and 21 consultants). After viewing the video, procedural step scores were significantly higher for junior FRCPC ($p = 0.001$), senior FRCPC ($p = 0.013$), and CCFP-EM ($p < 0.001$) residents as well as consultants ($p = 0.016$). There was also an increase in the number of respondents who reported confidence in their ability to perform RT post-video (n = 4 pre-video; n = 11 post-video). This video is an inexpensive, effective way to teach the critical procedural steps of RT and can be easily adapted for use at other institutions. Next steps for further education in this topic include development of a hands-on cadaveric simulation curriculum for residents.

Keywords: innovations in EM education, resuscitative thoracotomy, trauma education

MP21**A brief educational session is effective for teaching emergency medicine residents resuscitative transesophageal echocardiography**

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Innovation Concept: Resuscitative clinician-performed transesophageal echocardiography (TEE) is a relatively new ultrasound application that has the potential to guide the management of critically ill patients in the emergency department. The objective of this study was to determine the effectiveness of a brief training workshop for teaching a resuscitative TEE protocol to emergency medicine residents using a high-fidelity simulator. **Methods:** Emergency medicine residents with no prior TEE experience that were rotating through a university-affiliated emergency department were invited to participate in the study. Participants completed a questionnaire and baseline skill assessment using a high-fidelity simulator. The training session included a 20 minute lecture followed by 10 simulated repetitions of a 5-view TEE sequence with instructor feedback. Learning was evaluated by a skill assessment immediately after training and a transfer test 1-2 weeks after the training session. Ultrasound images and transducer motion metrics were captured by the simulator for blinded analysis. The primary outcome of this study was the percentage of successful views before and after training as determined by two blinded reviewers using an anchored scoring tool. Secondary