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Paving Professional Development Tracks: Create a Road from Scholarship to Program Requirements

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Objectives: We aimed to determine if participation in a POCUS refresher course impacts graduating medical students' confidence level in POCUS skills and planned frequency of POCUS use during internship.

Methods: We conducted a cross-sectional study of graduating non-surgical specialty-bound medical students participating in a POCUS refresher course 1-2 months before graduation. The course consisted of a two-hour didactic session followed by a hands-on practice session reviewing lung POCUS, cardiac POCUS, IVC POCUS, and ultrasound-guided access. Students completed pre-course and post-course surveys assessing their confidence in POCUS skills, planned utilization of POCUS as interns, and need for additional POCUS training before internship on a 5-point Likert scale.

Results: 179 students completed surveys before and after participating in the POCUS refresher course. After the course, students reported increased confidence in their POCUS skills ($p<0.001$) and felt they were more likely to perform lung POCUS ($p<0.001$), cardiac POCUS ($p<0.001$), IVC POCUS ($p<0.001$), and ultrasound-guided access ($p<0.001$) during internship. Participants also reported decreased need for additional POCUS training prior to beginning internship ($p=0.004$) (Table 1).

Question	Pre course score mean (CI)	Post course score mean (CI)	P value
Confidence in POCUS skills	2.02 (0.02, 4.02)	2.68 (1.31, 4.04)	<.001
Likelihood of needing additional POCUS training during your internship year before using POCUS	4.26 (1.88, 6.64)	3.98 (1.73, 6.23)	<.01
Planned frequency of POCUS use during internship	3.30 (1.10, 5.50)	3.65 (1.44, 5.87)	<.001
Planned frequency of lung POCUS use during internship	2.98 (.77, 5.20)	3.36 (1.15, 5.57)	<.001
Planned frequency of cardiac POCUS use during internship	3.18 (.90, 5.45)	3.58 (1.41, 5.74)	<.001
Planned frequency of IVC POCUS use during internship	3.14 (.88, 5.40)	3.46 (1.15, 5.76)	<.001
Planned frequency of ultrasound-guided peripheral IV placement during internship	3.20 (.86, 5.53)	3.71 (1.32, 6.07)	<.001
Planned frequency of ultrasound-guided central line placement during internship	3.42 (.70, 6.14)	4.04 (1.53, 6.55)	<.001

Conclusion: Participation in a POCUS refresher course 1-2 months prior to graduation increased medical student confidence in POCUS skills and planned frequency of use of POCUS applications during internship. As a result, this POCUS refresher course may serve an important role in better preparing new physicians for the increasing use of POCUS in medical practice.

2 Lessons Learned from an High Fidelity in situ ED ECMO Simulation Pilot

Alexandra Filkins

Background: ED initiated ECMO based CPR (eCPR) is a critical intervention to provide circulatory support for select cardiac arrest patients. As a high acuity low frequency procedure, it requires orchestration of ad-hoc teams, performing procedures in an unfamiliar environment, all within a tight timeline. We designed an interdisciplinary high fidelity simulation pilot program focused on the nontechnical skills of ED based eCPR. Educational Objectives: Prior to eCPR program initiation, needs assessments and interdisciplinary training are required to ensure a smooth process. We created an in situ simulation pilot to identify common clinical and educational needs for ED based eCPR at our safety-net urban level one trauma center.

Curricular Design: A simulation scenario was designed by clinical experts in simulation. The case began with an EMS call and concluded with the manikin on eCPR exiting the ED and participants included all members of the eCPR code team including EPs, CT surgeons, nurses, RT,, ED and ECMO technicians. The pilot was run in the same ED resuscitation bay by staff while on shift. The SIM was debriefed using the PEARLS method. We collected feedback about the roles and tasks of each member, medical and procedural understanding, as well as general comments. We conducted a thematic needs analysis, which was then used to refine the eCPR process and guide future training

Results: A consistent theme across all debriefings was the need for role clarification around learners, particularly for ED residents. Based on the survey we created the defined roles based on level of training. We identified important disconnects between team members regarding indications for chest compressions, defibrillation, and medications before, during, and after cannulation.

Conclusion: This eCPR in situ simulation identified the need for predefined and sequential roles for ED residents as well as targeted educational training on various phases of eCPR care.

3 Paving Professional Development Tracks: Create a Road from Scholarship to Program Requirements

Bryan Kane, Nathalie Torres, Shawn Quinn, Gavin Barr, Alexandra Amaducci, Mary Nemeth, Dawn Yenser

Background: The ACGME requires residents to participate in scholarship, quality improvement (QI), and patient safety (PS). Academic tracks that focus on a particular

subspecialty field of Emergency Medicine (EM) could enhance the educational experience of residents, provide a more tailored approach to fulfilling academic requirements provided by the ACGME, and establish a foundation for those residents seeking fellowship or a faculty position after graduation.

Educational Objectives: We describe the systematic development of a professional development track system.

Curricular Design: This curriculum was developed at a PGY 1-4 program based at a suburban health care network training 16 residents a year. After review of the ACGME requirements, the following 5 key areas were identified as being necessary components of a track: QI, PS, Committee Membership, Provision of Education, and Field Specific Additional Professional Development. Table One denotes the tracks developed. The 5 key areas address multiple ACGME requirements including IV.B.1, IV.D.2-3, and VI.A. In preparation for introduction, the residency research director prepared multiple Human Subjects Research Determinations (HSRDs) to allow possible dissemination.

Impact/Effectiveness: Table Two demonstrates exemplar activities in the identified 5 key areas. For ACGME CLER visits, the tracks provide systematic resident involvement in QI and PS. Work in QI has been identified by residents and faculty as the central driver of both work within the track and dissemination, making HSRD's central to track success. Being linked to ACGME requirements, including scholarly output, track work directly feeds into programmatic WebADS submissions. Measurable and ACGME reportable output includes presented/published abstracts at regional and national meetings, published articles, grand rounds for both EM and external departments, educational presentations at regional and national meetings, membership on hospital/regional/national committees, book chapters, and participation/completion of nationally certified fellowships. Feedback from faculty and residents is that PS work is difficult in some tracks. To that end, PS is being removed from the tracks and centralized with linkage to network work on high reliability.

Table 1. Tracks developed.

Toxicology	POCUS	Critical Care	EMS	Med ED (UME vs. GME focus)	EBM/ Implementation
Simulation	Wilderness Med	Admin/Operations	Informatics (in development)	Global EM (in development)	PEM
Peer Review/Patient Safety	Palliative Care	DEI/Health Equity	Research	Sports Medicine	

Table 2. Exemplar track output.

Quality Improvement	Patient Safety	Education	Committee	Field Specific Training
Critical Care: Lab Reduction (ACEP Poster)	Patient Safety: M+M Cases	EBM: 52 Articles Project	Critical Care: Network Code Blue Committee	Wilderness Medicine: FOAM Certification
Tox: TOXIC Registry (NACCT Posters)	EMS: Trench Rescue Case Report	Wilderness Medicine: EM Grand Rounds, PACEP Competition	Research: PACEP Research Committee	Med ED: ACEP Teaching Fellowship
POCUS: Rapid Education Event (Published)	PEM: ACEP Readiness	Tox: Regional Newsletter & Presentations	Patient Safety: Network Quality Council	Simulation: Sim Wars

4 Remote Point-Of-Care Ultrasound Training for Physicians in Low-Resource Countries

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Background: The use of point-of-care ultrasound (POCUS) in clinical practice is rapidly evolving. Classically, POCUS training has been done in person and is resource-intensive, which poses challenges to those in resource-limited settings. We have developed a comprehensive remote education program focused on POCUS for physicians in low-resource settings that allows training through a virtual platform.

Educational Objectives: The primary objective is to determine if providing a structured training platform via telehealth technology to physicians with limited resources and limited prior ultrasound training will improve their ability to perform and interpret POCUS. Additionally, we aim to determine if the course increases physicians' confidence and willingness to use POCUS to evaluate and manage their patients.

Curricular Design: Physicians from a remote hospital in Bhutan were enrolled in a six week course with weekly lectures that covered high-yield POCUS topics. Each lecture was followed by a hands-on component and time allotted to review cases. During the hands-on component, the physicians utilized Butterfly hand-held ultrasound devices to obtain images on volunteer-simulated patients. We reviewed the images in real-time and gave guided feedback via the telehealth platform provided by the World