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The iterative evaluation and development of a core and high-acuity low-occurrence simulation-based procedures training program for emergency medicine trainees

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Introduction: Competency-based skills development has driven the evolution of medical education. Simulation-based education is established as an essential tool to supplement clinical encounters and it provides the opportunity for low-stakes practice of common and high-acuity low-occurrence (HALO) procedures and scenarios. This is particularly important for emergency medicine trainees working to build confidence, knowledge, and skills in the field. **Methods:** In the procedural training sessions, learners rotate through 6 small-group stations over a 3-hour period. Skills topics are determined from faculty input, prior session feedback, and literature reviews. Topics included chest tubes, airway intervention, lumbar punctures and trauma interventions. Online content and brief written materials are used for pre-session learning. The small groups use hands-on faculty-guided training, with real-time feedback. Printed materials supplement key learning points at the stations. A combination of low-fidelity task trainers and simulated patients are used for practice and demonstration. R3 EM residents have the opportunity to mentor junior learners. Brief participant surveys are distributed at each session to gather qualitative and quantitative feedback. **Results:** Feedback forms were completed by 79/85 (92.9%) learners over a period of 4 years (2015-2018). Participants included medical students (11.8%), EM residents (52.9%), and non-EM residents (35.3%). 84.8% (67/79) gave positive qualitative feedback on the sessions, citing points such as the beneficial practice opportunities, quality of instruction, and utility of the models. Updated surveys (N = 26) used a 5-point Likert scale (1 = disagree strongly; 5 strongly agree) in addition to qualitative feedback. Participants indicated that sessions were valuable, and informative (M = 4.692, SD = 0.462; M = 4.270, SD = 0.710). They reported increased understanding of procedures discussed, and they were likely to recommend the session (M = 4.301, SD = 0.606; M = 4.808, SD = 0.394). **Conclusion:** The ongoing evaluation of our mentor guided hands-on low-fidelity and hybrid simulation-based procedural skills sessions facilitates meaningful programmatic changes to best meet the needs of EM learners. Sessions also provide a forum for EM resident mentorship of junior learners. Feedback indicates learners enjoyed the sessions and found this to be an engaging and effective instructional modality.

Keywords: education, procedures, simulation

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Paramedic perception of their role in the emergency department

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Introduction: Inter-disciplinary interaction in the Emergency Department (ED) is critical for good patient care. The perception of paramedics' experience in this interaction is not well described in the literature. This project gives voice to paramedics' understanding of their role in the ED. **Methods:** Qualitative thematic framework analysis of digitally recorded, semi-structured, telephone interviews of 11 paramedics from one urban and one rural Paramedic Service in southwestern Ontario. Recordings and field notes were repeatedly reviewed and discussed by two researchers. A conceptual framework

was constructed from themes emerging from the data. **Results:** Paramedics interviewed had 7-33 years of primary, advanced, or critical care experience. Three major themes emerged. (1) Patient advocate – Paramedics present the patient pre-hospital context and course of care information. They feel this information is essential and must be communicated. (2) Communication – Concerns raised that information is not listened to and valuable information is lost or ignored. A formal 30-second 'pause' for a structured paramedic to ED staff handover was seen as beneficial. Paramedics also want clinical feedback and outcome information from ED staff. No formal mechanism exists to obtain this. (3) Respect – When it exists, it is often based upon personal relationships between individuals. Paramedics feel when ED staff don't understand their scope of practice, their skills and abilities are ignored. In smaller EDs, paramedics also see themselves as a resource to help the ED staff with technical procedures. They need respect to do this. **Conclusion:** Paramedics' perceive themselves as providing valuable information and advocacy for their patients in the Emergency Department. In order to present this information, they require uninterrupted time, as short as 30-seconds, for communication. Their relationship with the ED staff is further strengthened by mutual respect and understanding of each discipline's scope of practice and interdisciplinary teamwork. Paramedics would like more feedback on clinical outcomes and on their pre-hospital care. Some areas for practice change suggested by this study include: time for un-interrupted communication of pre-hospital information, formal feedback, and reflection on how to improve interdisciplinary interactions.

Keywords: paramedics, role, self-perception

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Does the involvement of learners in emergency department patient assessments result in an increased rate of short-term return visits?

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Introduction: Learners, either medical students or residents, often provide the initial assessment of patients visiting the Emergency Department (ED). Their involvement in ED patient care has been shown to increase length of stay, time to disposition decision, utilization of imaging and admission rates. It is unclear, however, if learners have an impact on the rate of short-term unscheduled return visits. The objective of this study was to determine if the involvement of learners in ED visits increases the rate of short-term unscheduled return visits. **Methods:** This study was a retrospective analysis of ED visit data at a single tertiary care center over a one-year period. Short-term unscheduled return visits (return visits) were defined as ED visits presenting within 72 hours of discharge from an initial non-admit ED visit and resulting in an admission to an inpatient unit on the second visit. The primary outcome was the rate of return visits for each staff physician, with and without learners involved during the initial visit. The secondary outcome assessed the interaction of level of training (medical student year 3, 4, resident year 1, 2, etc.) on return visit rates. For the primary outcome, statistical analysis was with a Wilcoxon Matched Pairs test; staff alone vs with learners. A Kruskal-Wallis test was used to compare learner level of training. **Results:** Return visits accounted for 1858 (1.09%) of all visits (N = 172494) to this tertiary care ED over the one-year study period. Return visits were statistically more likely when learners were involved in the initial ED visit (1.16%, CI 0.12), compared to initial visits seen by staff