

## P039

**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

## P040

**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

## P041

**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

physicians alone (0.88%, CI 0.09) ( $p < 0.0001$ ). Return rates were statistically higher for PGY2 (1.67% CI 0.35) and PGY3 (1.66% CI 0.28) residents compared to staff physicians alone ( $p < 0.0001$ ). There was no difference in return visit rates between staff physicians and third year medical students (1.07% CI 0.27), fourth year medical students (1.21% CI 0.37), PGY1 (1.42% CI 0.22), PGY4 (1.23% CI 0.54) or PGY5 (1.33% CI 0.49) residents. **Conclusion:** This study demonstrated that the involvement of learners in ED patient assessments increased the rate of short-term unscheduled return visits. Moreover, return visit rates were highest for PGY2 and PGY3 residents. Further work is needed to understand the factors that contribute to this phenomenon.

**Keywords:** bounce backs, short-term unscheduled return visits

#### P042

##### **Pilot study for the inter-arm blood pressure systematic measurement during the diagnosis of transient ischemic attack in the emergency department**

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**Introduction:** Our principal aim was to document the feasibility of the systematic measurement of the inter-arm blood pressure difference (IABPD) during an episode of transient ischemic attack (TIA) or mild stroke diagnosed in the Emergency Department (ED). As secondary goal was to compare the systolic blood pressure (BP) at triage with the systolic BPs measured during the IABPD. **Methods:** This is a single center pilot study. Patients presenting in the ED for a diagnosis of TIA were recruited. Once patient has been triaged and diagnosed of TIA, a research assistant made sure that the patient lay on a stretcher for at least 5 minutes. Two automated sphygmomanometers were applied, on each arm. No specific device or device calibration were required. Three consecutive simultaneous BP readings were performed, inverting cuffs arm to arm between each reading. Only the last two set of readings were used to calculate the mean IABPD. This method enables to minimize the error coming from the potential sphygmomanometers' inaccuracies. **Results:** 32 patients were recruited from June to September 2017 and all had a successful IABPD measurement. Four patients had an IABPD  $>10$  mmHg, varying from 1.5 to 13 mmHg when the left arm was higher and from 1 to 61 mmHg when the right arm was higher. Of the 22 patients where the triage BP arm side selection was recorded, only 11 were congruent with the arm presenting the highest BP during the IABPD measurement. Selecting of the arm with the highest BP value may better reflect cerebrovascular risk exposition. The mean systolic BP at triage was 159.3 mmHg (95%CI: 144.9-173.7) compared to 144.8 mmHg (95%CI: 132.9-156.7) if the arm with the highest value during the IABPD measurement is selected and 142.4 mmHg (95%CI: 130.8-154.0) if the same arm as triage is selected. The p-value for these differences were 0.003 and 0.001 respectively. The patient which presented the IABPD of 61 mmHg, had a stroke 3 days after its ED visit which subsequently led to her death 10 days later. **Conclusion:** Our results show that the systematic IABPD measurement using a pragmatic approach in the ED is feasible and is ready to investigate its use in the context of a new TIA or mild stroke. This information may contribute to a better discrimination of the short-term risk of stroke and may help to diagnose acute aortic dissection, monitor more accurately BP during hyperacute stroke or estimate intracerebral hemorrhage risk if systemic thrombolysis is considered.

**Keywords:** Interarm blood pressure, pragmatic method, transient ischemic attack

#### P043

##### **Trauma team leaders in Canada: A national survey**

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**Introduction:** It was demonstrated that the early trauma team activation (TTA) could improve younger trauma patients outcomes and mortality rates. However, the link between older patient prognosis improvement and the activation / effectiveness of the Trauma team (TT) is still unclear. There is also a lack of information about the exact and optimal structure of TTs and their activation criteria, which may differ across centers. The main objective of this study is to provide a description of the current TT available in level 1 and 2 centres across Canada. **Methods:** In 2017, a survey using a modified Dillman technique was sent to 210 health professionals scattered across all Canadian trauma care facilities. The survey included questions regarding 1) the presence and the composition of a TT, 2) the established TT activation criteria, and finally 3) the initial patient care. **Results:** A total of 107 (57%) completed surveys were received. Among them, only 22 (11.7%) were from level 1 or 2 centres and were therefore considered for analyses. Seventeen respondents had a TT in their centre, and they all shared their TT activation criteria (1 to 27 different indications). Most frequently mentioned criteria were: suspected injuries (58.8%), judgment of the emergency physician (41.2%), systolic blood pressure (47.1%), Glasgow Coma score (35.3%) and respiratory rate (28%). In presence of a prehospital care warning trauma, the initial assessment of a severely injured patient is exclusively completed by a member of the TT for only 35.1% of the respondents. For 11.8% of respondents, TT coordinates airway management. For 64.7% of participants, the TT leader is the dedicated care provider to accompany patients until final orientation. **Conclusion:** These results suggest a great variability across Canada regarding the roles assumed by the TT, but also regarding the activation criteria leading them to take action.

**Keywords:** emergency care, polytrauma, trauma team

#### P044

##### **Use of a gait tracking device to count steps of older emergency department patient**

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**Introduction:** Delirium is a common complication among older people who need care in the emergency department (ED). Mobility is an evidence-based non-pharmacologic strategy shown to reduce delirium and functional decline among older patients in the acute care setting. However, previous research has shown that compliance with mobility is important to achieve this decreased incidence of delirium. Gait tracking devices have been used in previous studies to accurately measure steps, engagement and intensity of physical activity in older hospitalized patients. The objectives of this study are to compare the feasibility and validate the accuracy of three accelerometer-based gait tracking devices. This is the first step in a program of research to objectively measure mobility among older ED patients as a potential marker of delirium risk. **Methods:** This is a prospective, observational study of patients 65 years of age and older during their ED visit. We excluded those with critical illness, unable to communicate or