P060

State of the evidence for prehospital use of point-of-care lactate in patients with sepsis: A report from the Prehospital Evidence Based Practice (PEP) program

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Introduction: Early and accurate diagnosis of critical conditions is essential in emergency medical services (EMS). Serum lactate testing may be used to identify patients with worse prognosis, including sepsis. Recently, the use of a point-of-care lactate (POCL) test has been evaluated in guiding treatment in patients with sepsis. Operating as part of the Prehospital Evidence Based Practice (PEP) Program, the authors sought to identify and describe the body of evidence for POCL use in EMS and the emergency department (ED) for patients with sepsis. **Methods**: Following PEP methodology, in May 2018, PubMed was searched in a systematic manner. Title and abstract screening were conducted by the program coordinator. These studies were collected, appraised and added to the existing body of literature contained within the PEP database. Evidence appraisal was conducted by two reviewers who assigned both a level of evidence (LOE) on a novel three tier scale and a direction of evidence (supportive, neutral or opposing; based on primary outcome). Data on setting and study design were also extracted. **Results**: Eight studies were included in our analysis. Three of these studies were conducted in the ED setting; each investigating the POCL test's ability to predict severe sepsis, ICU admission or death. All three studies found supportive results for POCL. A systematic review on the use of POCL in the ED determined that this test can also improve time to treatment. Five of the total 8 studies were conducted prehospitally. Two of these studies were supportive of POCL use in the prehospital setting; in terms of feasibility and the ability to predict sepsis. Both of these study sites used this early information as part of initiating a "sepsis alert" pathway. The other three prehospital studies provide neutral support for POCL. One study demonstrated moderate ability of POCL to predict severe illness. Two studies found poor agreement between prehospital POCL and serum lactate values. **Conclusion**: Limited low and moderate quality evidence suggest POCL may be feasible and helpful in predicting sepsis in the prehospital setting. However, there is sparse and inconsistent support for specific important outcomes, including accuracy.

Keywords: emergency medical services, point of care lactate, sepsis

P061

Post-market surveillance of a serious board game: the GridlockED experience

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Introduction: In 2016, a team at McMaster began developing GridlockED, an educational (or "serious") board game designed to teach medical learners about patient flow in the emergency department. As serious board games are a relatively new phenomenon in medical education, there is little data on how marketed games are actually used once received by end-users. In this study our goal was to better understand the demographics and game usage for purchasers of the GridlockED board game, which will inform the further improvement or expansion of the game. **Methods**: Individuals who expressed interest in purchasing gridlockED via our online storefront were sent an anonymous online survey via Google Form. The survey collected demographic and qualitative data with a focus on the respondent's role in medicine, how they have used GridlockED, who they have played GridlockED with, and what changes or additions to GridlockED they would like to see. We also asked about changes for a potential mass-market version of the game targeted towards non-medical individuals. Individuals who did not purchase the game were asked about their barriers to purchase. We received an exemption for this study from our institutional review board. **Results**: 42 responses (out of 300 individuals on our mailing list, 14% response rate) were collected. Responding purchasers were from 16 different roles in healthcare and 11 different countries. The top 5 roles were: EM trainee, Community EM MD, Academic EM MD, Physicians from other specialties, and EM program director. The majority of respondents were Canadian (38%), with America (21%), New Zealand (10%), and Turkey (7%) the only other countries to have more than 2 respondents. 50% reported having played the game, with the most common use cases being for fun (76%), for teaching trainees (33%) or training with colleagues (19%). For those who did not purchase, price was the largest barrier (81%). 50% of respondents expressed interest in a disaster scenario expansion pack, with 33% interested in set lesson plans. **Conclusion**: GridlockED attracted interest from a wide range of medical professionals, both in terms or role and location. Users mainly reported using the game for fun, with fewer users using the game for teaching/training purposes. The main barrier to purchase was the game's price.

Keywords: medical education, serious games

P062

Designing team success - an engineering approach to capture team procedural steps to develop microskills for interprofessional skills education

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Introduction: Chest tube insertion, a critical procedure with a published complication rate (30%), is a required competency for emergency physicians. Microskills training has been shown to identify steps that require deliberate practice. Objectives were: 1. Develop a chest tube insertion microskills checklist to facilitate IPE, 2. Compare the microskills checklist with published best available evidence, 3. Develop an educational video based on the process map, 4. Evaluate the video in an interprofessional team prior to cadaver training as a proof of concept. **Methods**: The study was conducted between March 2018 and November 2018. An initial list of process steps from the best available evidence was produced. This list was then augmented by multispecialty team consensus (3 Emergency Physicians, 1 Thoracic Surgeon, 1 medical student, 2 EM nurses). Two prototyping phases were conducted using a task trainer and a realistic interprofessional team (1 EM Physician, 1 ER Nurse, 1 Medical student). A final microskills list was produced and compared to the procedural steps described in consensus publications. An educational video was produced and evaluated by an interprofessional team prior to cadaver training using a survey and Likert scales as a proof of concept. Participants were 7 EM RNs and 6 ATLS trained physicians. Participants were asked to fill out a nine-question survey, using a 5-point Likert Scale (1-strongly disagree to 5 strongly agree). **Results**: The final process map contained 54 interdisciplinary steps, compared to ATLS that describes 14 main steps and peer reviewed articles that describe 9 main steps. The microskills checklist described, in more detail, the steps

that relate to team interaction and the operational environment. Physicians rated the training video were able to apply what they learned in the video with an average of 4.67 (median of 5, mode of 5, and an IQR of 0.75). **Conclusion**: The development of the process maps and microkills checklists provides interprofessional teams with more information about chest tube insertion than instructions described in commonly available courses and procedural steps derived by consensus.

Keywords: education, microskills checklist, process maps

P063

Identification of emergency department patients for referral to rapid-access addiction services: A retrospective chart review
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Introduction: Emergency Department (ED) visits related to substance use are rapidly increasing. Despite this, few Canadian EDs have immediate access to addiction medicine specialists or on-site addiction medicine clinics. This study characterized substance-related ED presentations to an urban tertiary care ED and assessed need for an on-site rapid-access addiction clinic (RAAC). **Methods**: This prospective enrollment, retrospective chart review was conducted from June to August 2018. Adult patients presenting to the ED with a known or suspected substance use disorder were enrolled by any member of their ED care team using a 1-page form. Retrospective chart review of the index ED visit was conducted and the Emergency Department Information System was used to extract information related to the visit. A multivariable logistic regression model was fit to examine factors associated with recommendation for referral to a hypothetical on-site RAAC. This prospective enrollment, retrospective chart review was conducted from June to August 2018. Adult patients presenting to the ED with a known or suspected substance use disorder were enrolled by any member of their ED care team using a 1-page form. Retrospective chart review of the index ED visit was conducted and the Emergency Department Information System was used to extract information related to the visit. A multivariable logistic regression model was fit to examine factors associated with recommendation for referral to a hypothetical on-site RAAC. **Results**: Of the 557 enrolment forms received, 458 were included in the analysis. 64% of included patients were male and 36% were female, with a median age of 35.0 years. Polysubstance use was seen in 23% of patients, and alcohol was the most common substance indicated (60%), followed by stimulants (32%) and opioids (16%). The median ED length of stay for included patients was 483 minutes, compared to 354 minutes for all-comers discharged from the ED during the study period. 28% of patients had a previous ED visit within 7 days of the index visit, and an additional 17% had a visit in the preceding 30 days. The ED care team indicated 'Yes' for RAAC referral from the ED for 66% of patients, for a mean of 4.3 patients referred per day during the study period. Multivariable analysis showed that all substances (except cannabis) correlated to a statistically significant increase in likelihood for indicating 'Yes' for RAAC referral from the ED (alcohol, stimulants, opioids, polysubstance; p < 0.05). Patients presenting to the ED with a chief complaint related to substance use were also more likely to be referred (p = 0.01). **Conclusion**: This retrospective chart review characterized substance-related presentations at a Canadian urban tertiary care ED. Approximately four patients per day would have been referred to an on-site RAAC had

one been available. The RAAC model has been implemented in other Canadian hospitals, and collaborating with these sites to begin developing this service would be an important next step.

Keywords: addiction medicine, chart review, quality improvement

P064

A randomized trial comparing telephone tree, text messaging, and instant messaging app for emergency department staff recall for disaster response
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Introduction: A crucial component of a hospital's disaster plan is an efficient staff recall communication method. Many hospitals use a "calling tree" protocol to contact staff members and recall them to work. Alternative staff recall methods have been proposed and explored. **Methods**: An unannounced, multidisciplinary, randomized emergency department (ED) staff recall drill was conducted at night - when there is the greatest need for back-up personnel and staff is most difficult to reach. The drill was performed on December 14, 2017 at 4:00AM and involved ED staff members from three hospitals which are all part of the McGill University Health Centre (MUHC; Montreal, Quebec, Canada). Three tools were compared: manual phone tree, instant messaging application (IMA), and custom-made hospital Short Message Service (SMS) system. The key outcome measures were proportion of responses at 45 minutes and median response time. **Results**: One-hundred thirty-two participants were recruited. There were 44 participants in each group after randomization. In the manual phone tree group, 18 (41%) responded within 45 minutes. In the IMA group, 11 participants (25%) responded in the first 45 minutes. In the SMS group, seven participants responded in the first 45 minutes (16%). Manual phone tree was significantly better than SMS with an effect size of 25% (95% confidence interval for effect: 4.6% to 45.0%; P = .018). Conversely, there was no significant difference between manual phone tree and IMA with an effect size of 16% (95% confidence interval for effect: -5.7% to 38.0%; P = .17) There was a statistically significant difference in the median response time between the three groups with the phone tree group presenting the lowest median response time (8.5 minutes; range: 2.0 to 8.5 minutes; P = .000006). **Conclusion**: Both the phone tree and IMA groups had a significantly higher response rate than the SMS group. There was no significant difference between the proportion of responses at 45 minutes in the phone tree and the IMA arms. This study suggests that an IMA may be a viable alternative to the traditional phone tree method. Limitations of the study include volunteer bias and the fact that there was only one communication drill, which did not allow staff members randomized to the IMA and SMS groups to fully get familiar with the new staff recall methods.

Keywords: disaster, staff recall

P065

Emergency department staff perceived need and preferred methods for communication skills training
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Introduction: Burnout includes emotional exhaustion (EE), depersonalization (DP) and personal accomplishment (PA). Emergency Department (ED) staff have high levels of burnout that may be