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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

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