

time, frequency, order, and latency to observation of task-relevant and task-redundant items. Non-visual endpoints included behaviours such as summarizing, verbalizing concerns, and calling for definitive treatments, among others. **Results:** Preliminary findings suggest significant differences between high and low performers. High performers check vital signs faster, and look at patients and vital signs more often than low performers. Low-performing leaders display a more fixed gaze when starting a scenario. Lastly, high performers summarize, verbalize concerns, predict and prepare for future steps, and call for definitive treatment more often than low performers. **Conclusion:** There are significant differences between high and low-performing resuscitation team leaders in terms of their visual and behavioural patterns. These differences identify potential focus points for competency evaluations, and may direct educational interventions that could facilitate more efficient development of expertise. The potential to study crisis decision-making behaviours and performances using the methods and metrics identified, both in simulated and real-world settings, is substantial.

Keywords: simulation, resuscitation, gaze-tracking

P032

ISAEM and the push for emergency medicine worldwide

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Introduction: The International Student Association of Emergency Medicine (ISAEM) is a non-profit organization composed of medical students and student groups who believe that everyone deserves high-quality emergency care. Our aim is to promote and foster the concept, philosophy, and art of Emergency Medicine (EM). More specifically, we seek to 1) create an international network of medical students interested in EM, 2) support EM Interest Groups (EMIGs) and medical students in accomplishing their goals, 3) call for the recognition of EM as an independent specialty in countries where it does not exist, 4) help medical students learn, practice, and advance EM in countries where it is already established, and 5) carry out international projects for the benefit of medical students interested in EM. **Methods:** ISAEM tries to accomplish its goals primarily by connecting interested medical students and EMIGs with each other, as well as with EM professionals and organizations around the world. Additionally, we support medical students and EMIGs financially, offer them extensive benefits through a free membership, represent their local interests through our National Ambassadors, and advocate on their behalf at the local, national, and international level. **Results:** ISAEM's membership base is rapidly growing and our organization is currently represented by students in over 20 countries. In areas where the specialty of EM is not yet recognized, such as in Cameroon, ISAEM helped create the first EMIG and assists students with local projects. In countries where EM is new, such as Brazil, ISAEM helps students discover, explore, and advance this specialty. In countries where EM is thriving, like Canada, ISAEM offers students academic and personal opportunities to advance their careers and the specialty of EM internationally. Additionally, with the help of EM leaders worldwide, ISAEM has recently launched the FOAMed (Free Open Access Medical education) Translation Project and the International Observership Program. In the future, we aim to offer students international research, clinical, and mentorship programs, as well as more financial support. **Conclusion:** ISAEM is the international voice of medical student interested in promoting access to and expertise in emergency medical services worldwide. Through international collaboration, we hope to create an extensive network that will

benefit medical students and the specialty of Emergency Medicine for many years to come.

Keywords: international, students, global

P033

Engaging Indigenous patients in addressing cultural safety in an emergency department: a pilot initiative

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Introduction: Cultural safety is integral to good clinical care, particularly for Indigenous patients. However, it remains poorly defined in emergency department care (ED). Practitioners at an urban Canadian ED serving a significant Indigenous population sought to engage with the community to define areas for improvement in culturally safe emergency department care. **Methods:** A participatory action approach was used. A Steering Committee was created, including emergency clinicians and Indigenous health researchers. The Committee collaborated with a local Indigenous health study (Our Health Counts) to aid recruitment. Relevant Indigenous community organizations were identified and engaged via email and personal visits. Recruitment posters were placed in common areas at community sites and the ED. Convenience and snowball sampling was used - potential participants called an ED research coordinator and inclusion criteria were confirmed (self identify as Indigenous, > 18 years old, ED visit within the past year). Eligible participants were invited to attend a focus group facilitated by an Aboriginal Elder. **Results:** 31 individuals called to enroll for a total of 4 potential focus groups. 1 was successfully held: 5 participants were confirmed, 2 attended. Many recruitment challenges were identified, including difficulty maintaining contact/follow-up with a transient population, poster dissemination before recruitment start date, non-Indigenous patients attracted by compensation, and potential participant safety concerns regarding non-Indigenous contact point. **Conclusion:** Our initiative highlights challenges in engaging vulnerable populations in a large city. Focus groups may be logistically too challenging for this transient population. Other real-time data collection methods, such as phone interviews or surveys may be promising. An Indigenous contact point would likely improve perceived safety. The lack of socio-demographic data collection makes identifying potential participants challenging.

Keywords: Indigenous/Aboriginal health, emergency department, cultural safety

P034

Réanimation cardio-pulmonaire sans période de "no-flow": un nouveau dispositif

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Introduction: La b-card (Boussignac Cardiac Arrest Resuscitation Device) est un dispositif permettant d'assurer une oxygénation passive continue lors des manoeuvres de compressions/décompressions réalisées dans le cadre d'un arrêt cardiaque. Ce dispositif fonctionne par création d'une valve virtuelle induite par l'accélération d'un débit d'oxygène via des micro-canaliques. Cette valve est censée s'opposer aux flux de gaz entrant et sortant de la cage thoracique lors des compressions/décompressions. Elle permettrait d'obtenir une pression positive intra thoracique lors des compressions, et une pression intra thoracique négative lors des décompressions. L'expérimentation conduite a pour but de mesurer la pression statique créée dans le dispositif par le débit d'oxygène, ainsi que les valeurs de pressions et de flux générés en intra thoracique. **Methods:** La b-card est alimentée par

un débit d'oxygène de 15 L/min, et connectée via différentes interfaces à un poumon test pourvu de capteurs:

- Capteur de pression des voies aériennes (PAW en cm H₂O).
- Capteur de débit au niveau des voies aériennes.
- Capteur de pression "intra thoracique" (PIT max et min; et Pression Expiratoire Intra Thoracique).

Les mesures sont effectuées sans b-card, puis avec b-card connectée à un masque facial, un masque laryngé, une sonde trachéale.

Results: La pression "statique", celle de la valve virtuelle, mesurée au niveau de la b-card reste stable à 6 cm d'H₂O, sous un débit de 15 L/min. Elle permet une résistance à hauteur de cette valeur aux flux de gaz entrant ou sortant du thorax expérimental en fonction des compressions/décompressions. Les pressions intra thoraciques positives mesurées lors des compressions restent équivalentes autour de 25 à 30 cm H₂O, et ce quelle que soit l'interface utilisée. Les pressions intra thoraciques négatives mesurées lors des décompressions restent équivalentes autour de 10 à 15 cm d'H₂O, et ce quelle que soit l'interface utilisée. **Conclusion:** Les pressions intra thoraciques obtenues en associant une oxygénation passive par la b-card à des compressions/décompressions continues permettent d'assurer une ventilation efficace et synchrone. Les pressions mesurées au niveau du dispositif sont constamment inférieures à la pression d'ouverture moyenne oesophagienne, ce qui éviterait toute insufflation gastrique.

Keywords: arrêt cardiaque, oxygénation passive, compressions thoraciques continues

P035

Optimization of indirect pressure to temporize life-threatening haemorrhage: a simulation study

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Introduction: Minimizing haemorrhage using direct pressure is intuitive and widely taught. In contrast, this study examines the use of indirect-pressure, such as external aortic compression which has been identified as an immediately applicable maneuver to address the leading cause of battlefield mortality: junctional hemorrhage. However, it is currently unclear how to optimize this technique. **Methods:** This prospective, block-randomized, cross-over simulation study of compression optimization was performed on a model of central vessel compression that recorded weight (lbs) and pressure (mmHg). Forty participants simulated external aortic compression on the ground as well as a stretcher with and without a backboard. Participants were blinded to compression weight and pressure, as well as the purpose of the study, to minimize preparation bias. Manoeuvres were performed in alternating order to control for skill acquisition and fatigue. Scripted instructions were followed to compress with 1 then 2 hands, and to apply "sustainable effort" and then "maximal effort". **Results:** The greater the compressor's bodyweight the greater their mean compression (Pearson's correlation 0.9342). Using one-hand, a mean of 28% participant bodyweight (95%CI, 26% - 30%) could be transmitted at sustainable effort, waist-height, and on a stretcher. A second compressing hand increased rescuer bodyweight transmission by 10-22% regardless of other factors (i.e. presence/absence of a backboard; rescuer position) ($p < 0.001$). Adding a backboard increased transmission of rescuer bodyweight 7%-15% ($p < 0.001$). Lowering the patient from waist-height backboard to the floor increased transmission of rescuer bodyweight 4%-9% ($p < 0.001$). Kneeling on the model was the most efficient method and transmitted 11% more weight compared to two-handed maximal compression ($p < 0.001$). **Conclusion:** Efficacy is maximized with

larger-mass, two hands, and compression on hard surfaces/backboards. Knee compression is most effective and least fatiguing, thus assisting rescuers of lower weight and lesser strength, where no hard surfaces exist (i.e. no available backboard or trauma on soft ground), or when lengthy compression is required (i.e. remote locations). This study demonstrates the feasibility of indirect pressure as a potential temporizing measure for life-threatening haemorrhage not amenable to direct compression.

Keywords: junctional trauma, hemorrhage, prehospital care

P036

A clinical decision support intervention to increase usage of probenecid in the ED

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Introduction: In certain circumstances, skin and soft tissue infections are managed with intravenous (IV) antibiotics. In our center, patients initiated on outpatient IV antibiotics are followed up by a home parental therapy program the following day. A significant number of these patients require a repeat visit to the ED because of clinic hours. Probenecid is a drug that can prolong the half-life of certain antibiotics (such as cefazolin) and can therefore avoid a repeat ED visit, reducing health care costs and improve ED capacity. Our goal was to increase probenecid usage in the ED in order to optimize management of skin and soft tissue infections (SSTI) in the ED. The primary outcome was to compare the usage of probenecid in the pre and post-intervention phase. Secondary outcomes were to compare revisit rates between patients receiving cefazolin alone vs cefazolin + probenecid. **Methods:** Using administrative data merged with Computerized Physician Order Entry (CPOE), we extracted data 90 days pre- and 90 post-intervention (February 11, 2015 to August 11, 2015). The setting for the study is an urban center (4 adult ED's with an annual census of over 320,000 visits per year). Our CPOE system is fully integrated into the ED patient care. The multi-faceted intervention involved modifying all relevant SSTI order sets in the CPOE system to link any cefazolin order with an order for probenecid. Physicians and nurses were provided with a 1 page summary of probenecid (indications, contra-indications, pharmacology), as well as decision support with the CPOE. Any patients who were receiving outpatient cefazolin therapy were included in the study. **Results:** Our analysis included 2512 patients (1148 and 1364 patients in the pre/post phases) who received cefazolin in the ED and were discharged during the 180 day period. Baseline variables (gender, age, % admitted) and ED visits were similar in both phases. In the pre-intervention phase 30.2% of patients received probenecid and in the post-intervention phase 43.0%, for a net increase of 12.8% ($p = < 0.0001$). Patients who received probenecid had a 2.2% (11.4% vs 13.6%, $p = 0.014$) lower re-visit rate in the following 72H. **Conclusion:** We have implemented a CPOE based clinical decision support intervention that demonstrated significant increase in probenecid usage by emergency physician and resulted in a decrease in ED revisits. This intervention would result in health care cost-savings.

Keywords: probenecid, decision support, infection

P037

The impact of fever on corrected QT interval in a general emergency department population

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Introduction: Fever is one of the most common reasons for presentation to the emergency department (ED). Interestingly, a number of small