since it first became a notifiable disease in 2000. Our objectives were to describe the clinical and laboratory characteristics of iGAS in a geographic area that sees a relatively high volume of cases annually. **Methods**: We conducted a retrospective chart review of all adult and pediatric patients presenting to the Thunder Bay Regional Health Sciences Centre Emergency Department from January 2016 to December 2017 with a hospital discharge diagnosis of iGAS infection using ICD-10 codes. Patient demographics, host characteristics, triage vital signs, laboratory values, culture sites, and disposition were analyzed using univariate and bivariate statistics. **Results**: Forty-five cases of iGAS were identified over 2 years, with a mean age of 45 years (SD 18). The most prevalent associations were male sex (69%), diabetes mellitus (44%), current or previous alcohol abuse (38%), and current or previous intravenous drug use (33%). Prevalence of iGAS was roughly two times the national average in 2016 (11.5 per 100,000) and four times the national average in 2017 (25.5 per 100,000). Mean triage vital signs included a systolic blood pressure of 126 mmHg (SD 24), diastolic blood pressure of 73 mmHg (SD 16), temperature of 37.3°C (SD 1.4), oxygen saturation of 97% (SD 2), heart rate of 113 beats per minute (SD 22), and respiratory rate of 22 breaths per minute (SD 7). Mean laboratory values revealed a white blood cell count of 17,500 cells/μL (SD 9,800) and C-reactive protein of 243 mg/L (SD 144). A higher Laboratory Risk Indicator for Necrotizing Fasciitis (LRINEC) score was positively correlated with longer hospital length of stay ($r = 0.46$, $p < 0.01$). **Conclusion**: Despite its morbidity and mortality, iGAS infections often present insidiously with only mild abnormalities in triage vital signs, and require a high index of suspicion by the emergency physician for a prompt diagnosis, particularly in at-risk populations such as patients with diabetes mellitus or those who misuse alcohol or drugs.

Keywords: Streptococcal infections, Streptococcus pyogenes, vital signs

P034

Identifying unmet palliative care needs in the emergency department

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Introduction: The goal of palliative care (PC) is to improve quality of life for both patients and families facing a life-limiting illness. Many individuals in need of PC present to the Emergency Department (ED) with symptomatic complaints. Therefore, the ED may be a good place to connect patients with PC teams. Unfortunately, a lack of communication between patients and medical teams may result in admission to hospital even if this no longer aligns with the goals of care. The aims of this study were to identify the proportion of ED patients with unmet PC needs and to determine if access to rapid outpatient PC follow-up could reduce unnecessary admissions. **Methods**: University Health Network (UHN) is an urban academic centre with EDs at two sites, Toronto General Hospital (TGH) and Toronto Western Hospital (TWH). A consecutively enrolled sample of 417 patients that presented to these EDs between July 1-August 14, 2018 was taken. ED nurses and physicians were asked to complete a content validated PC screening tool on all eligible patients. Patients were eligible for screening if they (1) were >18 years of age, (2) had been designated a level 2-5 according to the Canadian Triage and Acuity Score, and (3) had been triaged to the subacute or acute areas of the department. **Results**: Across both sites, 45% of patients screened had a life-limiting illness and 30% had unmet PC needs. Among those with unmet PC needs, 79% had no identifiable involvement with a PC team. TWH had fewer patients with a life-limiting illness compared to TGH (31% vs 57%), but higher rates of unmet PC needs (81% vs 59%, confidence interval for the difference: 8%-34%, $p = .003$) and less PC involvement (6% vs 24%, confidence interval for the difference: 4%-30%, $p < .01$). 73% of patients at UHN with unmet PC needs were likely to be admitted to hospital. In 14% ($n = 17$) of these cases, admissions were felt by physicians to have potentially been avoided if rapid PC follow-up was available. **Conclusion**: A high percentage of patients presenting to the EDs at UHN have life-limiting illnesses with unmet PC needs. A rapid access outpatient PC clinic, available for referral from the ED, may help to both connect patients with the resources they need and avoid admission to hospital.

Keywords: emergency, palliative, unmet

P035

Impact of EMS direct referral to community care on emergency department utilization

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Introduction: The Community Referral by Emergency Medical Services (CREMS) program was implemented in January 2015 in Southwestern Ontario. The program allows Paramedics interacting with a patient to directly refer those in need of home care support to their local Community Care Access Centre (CCAC) for needs assessment. If indicated, subsequent referrals are made to specific services (e.g. nursing, physiotherapy and geriatrics) by CCAC. Ideally, CREMS connects patients with appropriate, timely care, supporting individual needs. Previous literature has indicated CREMS results in an increase of home care services provided to patients. **Methods**: The primary objective of this project is to evaluate the impact of the CREMS program on Emergency Department utilization. Data for all CCAC referrals from London-Middlesex EMS was collected for a thirteen month period (February 2015-February 2016). For all patients receiving a new or increased service from CCAC the number of Emergency Department visits 2 years before referral and 2 years after referral were calculated. A related samples Wilcoxon Signed Rank Test was performed to examine the difference in ED visits pre and post referral to CCAC. **Results**: There were 213 individuals who received a new or increased service during the study timeframe. Median [IQR] patient age was 77 [70-85.5]. 113/213 (53%) of patients were female. The majority of patients 135/213 (63.4%) were a new referral to CCAC. The median [IQR] number of hospital visits before referral was 3 [1-5] and after referral was 2 [0-4]. There was no significant difference in the overall number of ED visits before versus after referral (955 vs 756 visits, $p = 0.051$). **Conclusion**: Community based care can improve patient experience and health outcomes. Paramedics are in a unique position to assess patients in their home to determine who might benefit from home care services. CREMS referrals for this patient group showed a trend towards decreased ED visits after referral but the trend was not statistically significant.

Keywords: community care, emergency medical service

P036

Digoxin immune fab treatment for digoxin and non-digoxin cardioactive steroid toxicity: a scoping review

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Introduction: Cardioactive steroid poisoning occurs worldwide with the use of pharmaceutical digoxin and botanical cardiac glycosides. The wholesale price of the antidote, digoxin immune fab, has increased over 300% from 2010 to 2015. Our objective was to identify gaps in the existing literature with respect to the use of digoxin immune fab in cardioactive steroid toxicity in acute care settings. **Methods**: We used scoping study methodology, as described by Arksey and O'Malley, to assess the range and scope of empiric research and will report: 1) sources of cardioactive steroid toxicity in acute settings; 2) doses of digoxin immune fab used in treatment; and, 3) intervention outcomes of acute cardioactive steroid toxicity following the administration of digoxin immune fab as first or second-line therapy. We collaborated with a library scientist to devise search strategies for PubMed, CINAHL, EMBASE, CENTRAL and Toxnet. We sought unpublished literature through the Canadian Electronic Library, Proquest, and Scopus and searched reference lists of included studies. We hand searched relevant conference proceedings and applicable guidelines. Two reviewers independently reviewed titles and abstracts using predetermined criteria. Using a structured data abstraction form, two reviewers independently extracted data. All discrepancies were resolved through consensus. **Results**: Our search strategy yielded 3458 results. After screening titles and abstracts 384 underwent full text screening. We included 147 studies and are currently extracting data from 12 French studies and 135 English studies. To date we have extracted data from 90 case reports and case series. **Conclusion**: Given concerns over rising costs, our findings will shed light on the extent of the evidence for use of digoxin immune fab in acute care settings.

Keywords: cardiac glycosides, digoxin immune fab

P037

The Devil may not be in the detail - training first-responders to administer publicly available epinephrine – microskills checklists have low inter-observer reliability

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Introduction: Improving public access and training for epinephrine auto-injectors (EAIs) can reduce time to initial treatment in anaphylaxis. Effective use of EAIs by the public requires bystanders to respond in a timely and proficient manner. We wished to examine optimal methods for assessing effective training and skill retention for public use of EAIs, including the use of microskills lists. **Methods**: In this prospective, stratified randomized study, 154 participants at 15 sites receiving installation of public EAIs were randomized to one of three experimental education interventions: A) didactic poster (POS) teaching; B) poster with video teaching (VID), and C) Poster, video, and simulation training (SIM). Participants were tested by participation in a standardized simulated anaphylaxis scenario at 0-months, immediately following training, and again at follow-up at 3 months. Participants' responses were videoed and assessed by two blinded raters using microksills checklists. The microskills lists were derived from the best available evidence and interprofessional process mapping using a skills trainer. The interobserver reliability was assessed for each item in a 14 step microskill checklist composed of 3-point and 5-point Likert scale questions around EpiPen use, expressed as Kappa Values. **Results**: Overall there was poor agreement between the two raters. Being composed or panicked had the highest level of agreement K = 0.7, but a result that did not reach statistical significance (substantial agreement, p = 0.06) calling for EMS support has the second highest level of agreement, K = 0.6 (moderate agreement, p = 0.01), the remainder of the items had very low to moderate agreement with a Kappa value range of -103 to 0.48. **Conclusion**: Although microskills chesklists have been shown to identify areas where learners and interprofessional teams require deliberate practice, these results support previously published evidence that the use of microskills checklists to assess skills has poor reproducibility. Performance will be further assessed in this study using global rating scales, which have shown higher levels of agreement in other studies.

Keywords: education, epinephrine auto-injectors, first responders

P038

A procedural skills needs assessment targeting physicians providing emergency department coverage in rural Newfoundland and Labrador

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Introduction: Maintaining competence in high-acuity low-occurrence (HALO) procedures is often difficult due to their infrequent occurrence. While simulation is a valuable tool to hone skills, providing effective simulation-based education (SBE) to learners outside academic centers can be challenging. Utilizing a mobile tele-simulation unit (MTU) with expert instruction from a geographically separated mentor could prove a valuable approach to overcoming barriers in this setting. However, to maximize benefit and buy-in, the training modules developed for this unique delivery method must align with the needs of those practicing in rural settings. **Objectives**: - To evaluate the procedural skills training needs of emergency medicine (EM) physicians in rural Newfoundland and Labrador (NL) - To inform the development of simulation modules designed for use in a MTU **Methods**: A web-based needs assessment was distributed to physicians registered with the NL Medical Association, working in rural locations, and having EM listed as their primary specialty. Participants evaluated their comfort, performance frequency and desire to have further training for 12 HALO procedures. Two EM physicians selected these from a broader list of core procedural skill competencies for CCFP-EM residents at Memorial University. Participants were also able to suggest other procedures that might benefit from SBE. **Results**: The data collection occurred for 8 weeks with a 68% response rate (N = 22). No respondents had formal EM training outside of exposure in family medicine residency. 60% had 10+ years practicing EM. Chest tube insertion (100%), difficult intubation (92.3%) and surgical airway (92.3%) were the procedures that most respondents felt required more SBE. In practice, they most often performed bag-valve ventilation, splint application and procedural sedation (>10 per year). Additional procedures felt to require SBE were central venous line placement and trauma assessment. Opportunities to participate in SBE were limited (66.7%-less than annually). Despite this, most participants agreed SBE would be a significant benefit if accessible (93.3%). The greatest barriers to SBE included lack of equipment, rural location, and time necessary for travel to larger centres. **Conclusion**: The provision of medical care in rural settings can be particularly challenging when HALO procedures must be performed. Unique delivery methods of SBE targeted to the needs of rural practitioners may help bridge gaps in knowledge and technical skills.

Keywords: procedural skill, rural practice, simulation-based education