

**P082****Current state of POCUS usage in Canadian emergency departments**

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**Introduction:** Point of care ultrasound (POCUS) has many applications in Emergency Medicine which are proven to improve patient outcomes. Training programs and guidelines for its use are available but its utilization metrics across Canadian Emergency Departments are unknown. This study aims to provide a comprehensive national assessment of POCUS usage, with a key component comparing training with patterns of use.

**Methods:** A survey was distributed via email to all staff adult emergency physician members of the Canadian Association of Emergency Physicians (CAEP). The survey included questions related to training, attitudes towards POCUS, POCUS utilization, and barriers to POCUS use. Standard descriptive statistics were calculated, and differences in mean POCUS usage between groups were measured using a one-way analysis of variance (ANOVA). **Results:** The survey received 189 responses from emergency physicians from across Canada, 81% of which viewed POCUS as "useful and essential". Respondents indicated that on average, POCUS was used during 71% (SD 29%) of shifts and on 23% (SD 17%) of patients. POCUS was most commonly used for basic applications, including thoracoabdominal trauma (FAST), cardiac assessment in arrest (trans-abdominal), and assessing for pericardial effusion. The most commonly cited barrier to wider POCUS adoption was a lack of training, with 41% of respondents identifying this as an issue. Correspondingly, formal POCUS training and certification were associated with significantly higher POCUS usage: usage rates ranged from 11.5% (SD 10.5%) of patients for those with formal training but no certification to 39.5% (SD 16.4%) of patients for those with a POCUS fellowship ( $p < 0.001$ ). **Conclusion:** The presented results from this survey provide an initial overview of the current state of POCUS usage in Canadian Emergency Departments. In summary, a higher level of training was associated with higher POCUS usage, and over a third of the respondents cited lack of training as a barrier to adoption; this suggests that efforts to facilitate POCUS utilization should focus on improving access to formal training and certification. Future work will involve further evaluation of additional barriers preventing POCUS usage in the ED, with the goal of providing information that will encourage changes that support widespread POCUS adoption.

**Keywords:** point of care ultrasound, ultrasound, point of care

**P083****IV fluid resuscitation of sepsis patients in London, ON: a retrospective chart review**

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**Introduction:** The Surviving Sepsis Campaign (SSC) suggests that hypovolemic patients, in the setting of hypoperfusion, be administered 30 mL/kg crystalloid fluid within the first 3 hours of presentation to hospital. More recent evidence suggests that fluid resuscitation within 30 min of sepsis identification is associated with reduced mortality, hospital length of stay and ICU days. This study describes Emergency Department (ED) fluid resuscitation of patients with septic shock and/or sepsis-related in-hospital mortality, prior to implementation of a sepsis medical directive.

**Methods:** Retrospective chart review of adult patients (18+ years), presenting to two tertiary care EDs between 01 Nov 2014 and 31 Oct 2015, with  $\geq 2$  SIRS criteria and/or ED suspicion of infection and/or ED or hospital discharge sepsis diagnosis. Data were abstracted from electronic

health records. Patients with septic shock, or who expired in the ED/hospital, were selected for manual chart review of clinical variables including: time, type and volume of ED IV fluid administration. **Results:** 13,506 patient encounters met inclusion criteria. In-hospital mortality rates were 2% (sepsis), 11.5% (severe sepsis), and 24.1% (septic shock). Of patients hypotensive at triage, fluids were administered to 33/50 (66.00%) septic shock patients, and 22/43 (51.16 %) patients who eventually expired. For all septic shock and expired patients (943), median time to IV fluid initiation was 60.50 minutes [29.75 to 101.25] for septic shock and 77.00 minutes [36.00 to 127.00] for expired patients. Median volume of fluid administered was 1.50L [1.0 to 2.00] for septic shock and 1.00L [1.00 to 2.00] for expired patients. Of septic shock and expired patients, IV fluid administration and body weight data was available for 148 encounters (15.6%). Within this group, 19 (12.8%) received no IV fluid. 90 (60.8%) received 0.1-75% of their recommended IV fluid volume. 25 (16.9%) received 75.1-125%, and 14 (9.4%) received  $>125.1\%$  of their recommended fluid volume. **Conclusion:** In this study, severe forms of sepsis were often treated with  $<30$  mL/kg crystalloid fluid. Fluids were administered outside of the recommended 30 min, but within the 3 h, time windows. In-hospital mortality was consistent with published data. Future research will examine a broader data set for IV fluid resuscitation in sepsis, and will measure the impact of a fluid resuscitation in sepsis medical directive.

**Keywords:** sepsis, resuscitation, crystalloid

**P084****"iPads on!"-Does the provision of iPad devices within an emergency department improve the frequency of access to departmental web KT resources?**

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**Introduction:** Barriers to implementing effective Knowledge Translation (KT) in Emergency Departments include lack of awareness, lack of time and limited access to resources. In our teaching hospital emergency department (ED), we implemented a new department website ([www.sjrhem.ca](http://www.sjrhem.ca)) to provide improved access to our KT resources. Having published the website, we wanted to know if the addition of conveniently situated pre-configured iPads would increase access to the website from within the department. **Methods:** The website was developed and first published in April 2014. Two iPads (Apple Inc.) were preconfigured with icons linking directly to targeted pages on our website, including the physician schedule, academic calendar. The iPads were securely located at physician charting desks in October 2014. We used Google analytics to record of webpage visits for 25 weeks before and after the installation of the iPads. Comparisons of mean weekly visits were made using the Student T test (GraphPad Prism). **Results:** The mean weekly page views for the website increased after the installation of the iPads from a baseline of 103 (95%CI 83.9-121) to 198 (181-215); an increase of 95% (71-120;  $p < 0.001$ ). Limiting analysis to devices utilising our hospital IP address we saw a 403% increase in mean weekly page views from 6.4 (4.35-8.45) to 32.2 (26.7-37.8;  $p < 0.001$ ). There was a clear step increase in website access from the date of iPad installation. Comparing the increases in average weekly views for those pages with direct link iPad icons (Clinical 11.4 before, 16.6 after, 46%, Schedule 30, 39, 30%, Calendar 10.7, 46.3, 330%, Home 84.1, 115.4, 37%) to the top accessed pages without iPad icons (Research 4.3, 6.2, 44%, Ultrasound 4.9, 9.8, 100%) did not, other than for the calendar page, demonstrate an observable difference. However, when analysed by views originating the hospital IP address, the pages

with iPad icons were responsible for 88% of landing pages. Over the last two years the department iPads were responsible for 17% of our page views, with 6 of the department guideline pages featuring in the top 20 pages viewed. **Conclusion:** Provision of preconfigured iPad devices within the clinical environment of a busy ED significantly increases access from within that environment to a department website.

**Keywords:** knowledge translation, tablet device, department website

#### P085

##### **Dental complaints in the emergency department: a national survey of Canadian EM physicians**

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**Introduction:** Dental complaints and emergencies are a common emergency department (ED) issue that has not been extensively studied. This study aimed to provide an evaluation of Canadian practice patterns and clinical training relating to dental emergencies in the ED. **Methods:** We conducted an electronic survey inviting 1520 Canadian emergency medicine (EM) physicians from CAEP's physician distribution network. Thirty-three questions were asked regarding ED physician training with dental emergencies, practice patterns and comfort with dental care, current available ED dental resources, and how dental care may be improved in Canadian EDs. Standard descriptive statistics were calculated. **Results:** Survey response rate was 15.1%. Respondents were predominantly male (62.8%) with a mean 15.3 years (SD:  $\pm 9.8$ ) of practice, and were primarily CCFP-EM (50.7%) or FRCP-trained (25.6%) in either tertiary (48.0%) or community (36.3%) teaching hospitals. They received broad training on dental issues, but this was limited in scope to  $\leq 1$  day of residency (61.4%). A combined majority (59.6%) felt their residency left them somewhat to very unprepared for treating dental complaints, and <40% of physicians reported feeling comfortable with specific, common dental emergency procedures, with the exception of avulsed tooth storage (61.1%). For pain management and local trauma exploration, 36.9% felt somewhat to very uncomfortable performing oral and facial nerve blocks. Many respondents do not have access to any dental emergency supplies (48.0%), or do not know if they have any access (14.2%). Furthermore, 18.9% have no access to any professional support for help with dental emergencies requiring advanced management. Respondents believe dental emergency consultant support is an issue at their centre (62.5%). EM physicians want more training with dental emergencies (79.5%) and improved access to dental-specific emergency materials in their departments (63.7%). The greatest barriers to providing good ED dental care were cost to patients (72.7%), physician comfort treating complaints (54.7%), and clear follow-up with outpatient dental professionals (54.3%). **Conclusion:** ED physicians feel relatively unprepared by their residency training to treat dental complaints, and professional dental support is an issue in the majority of EDs. Dental care may be improved with more access to training, to dental ED resources and professional support.

**Keywords:** dentistry, dental complaints, emergency

#### P086

##### **Effectiveness of interventions to decrease imaging among emergency department low back pain presentations: a systematic review**

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**Introduction:** Low back pain (LBP) is an extremely frequent emergency department (ED) presentation. Although LBP imaging often results in no

change to the ED management, does not identify abnormalities, and has documented risks (e.g., radiation exposure), advanced imaging (i.e., computed tomography [CT], magnetic resonance imaging [MRI]) for patients with LBP has become increasingly frequent in the ED. The objective of this review was to identify and examine the effectiveness and safety of interventions aimed at reducing imaging in the ED for LBP patients. **Methods:** Six bibliographic databases and grey literature were searched. Comparative studies assessing interventions aimed at reducing ED imaging for adult patients with LBP were eligible for inclusion. Two reviewers independently screened study eligibility, completed data extraction, and assessed the quality of included studies. Due to a limited number of studies and significant heterogeneity, a descriptive analysis was performed. **Results:** The search yielded 510 unique citations of which three before-after studies were included. Quality assessment identified potential biases relating to comparability between the pre- and post-intervention groups, reliable assessment of outcomes, and an overall lack of information on the intervention (i.e., time point, description, intervention data collection). The interventions to reduce lumbar spine imaging varied considerably. Study interventions included: 1) clinical decision support (i.e., a specialized X-ray requisition form), which reported a 47.4% relative reduction of lumbar spine radiography referrals; 2) clinical decision guidelines, which reduced referrals by 43.8%; and 3) multi-disciplinary protocols, which reported a reduction in the MRI referral rate by 26.1%. Despite reductions in simple imaging, CT use increased in two of the three studies. **Conclusion:** LBP has been identified as a key area of imaging overuse (e.g., *Choosing Wisely* recommendation). Yet, evidence of interventions' effectiveness in reducing imaging for ED patients with LBP is sparse. While there is some evidence to suggest that interventions can reduce the use of simple imaging in LBP in the ED, unintended consequences have been reported and additional studies employing higher quality methods are strongly recommended.

**Keywords:** diagnostic imaging, low back pain, intervention

#### P087

##### **Cellulitis and erysipelas management at an academic emergency department: current practice vs the literature**

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**Introduction:** Cellulitis and erysipelas are common presentations for the general practitioner. Antibiotic therapy targeting beta-hemolytic streptococci and *Staphylococcus aureus* is the mainstay of treatment for children and adults with these infections. Although evidence-based Canadian guidelines for appropriate management exist, inconsistent practices persist. Our objective was to determine the level of adherence to current evidence by emergency physicians at two academic hospitals in Kingston, Ontario. **Methods:** We conducted a retrospective chart review of 200 randomly selected electronic medical records. Records belonged to patients with a discharge diagnosis of cellulitis or erysipelas who were seen in the emergency departments of Kingston General Hospital or Hotel Dieu Hospital between January 1 and June 30, 2015. We manually collected data describing patient demographics, medical history, and medical management. **Results:** There were 707 total visits to the emergency departments in the study period for cellulitis or erysipelas. In our random sample, for those diagnosed with cellulitis, 44% received oral cephalosporin alone, which was the most common form of therapy for uncomplicated infection. Of all the patients who received any antibiotics, 36% received at least one dose of parenteral antibiotics, despite only 6.7% showing systemic signs of illness. Emergency physicians chose ceftriaxone for 88% of the patients who received parenteral antibiotics. **Conclusion:** There was wide variation in antibiotic selection and route of administration for