

unobtainable) vs. NIRS 12 [8, 17] cmH<sub>2</sub>O (13 unobtainable). Agreement and correlation between the two devices was extremely low ( $R^2 = 0.04$ ). While neither technique demonstrated a strong association with the treating physicians estimate of volume status, only the ultrasound values increased monotonically with physician estimate. With regards to secondary outcomes, ultrasound measurements took less time (paired difference 50 seconds [95% CI 7, 93]), and operators were more confident (0.63 [0.02, 1.23] out of 10) and at ease (0.78, [0.13, 1.43]) with ultrasound; patients rated discomfort equally (-0.06 [-0.30, 0.18]). **Conclusion:** Non-invasive measurement of CVP remains a challenge in the emergency department. The external jugular pressure by NIRS has very high variability and poor agreement with ultrasound-enhanced inspection of the internal jugular, suggesting that this technique is not yet practical for use by non-experts.

**Keywords:** central venous pressure, ultrasound, preload

#### P057

##### **A systematic review of the efficacy of opioid analgesics for the management of acute pain in older adults in the emergency department**

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**Introduction:** Emergency department (ED) providers are frequently challenged with how best to treat acute pain in older patients, specifically when non-opioid analgesics are insufficient or contraindicated. Studies have documented older patients presenting to the ED with painful conditions are less likely to receive pain medications than younger patients, and this inadequate pain control has been associated with increased risk of delirium and longer hospital stays. As there are no guidelines informing best practice of analgesia in the older adult population, emergency physicians often report uncertainty regarding the ideal choice of opioid analgesic. The objective of this study was to compare the efficacy of opioid analgesics for acute pain in older adults (70 years) in the ED. **Methods:** Electronic searches of Medline, EMBASE, Cochrane Central Register of Controlled Trials, Cochrane Database of Systematic Reviews and CINAHL were conducted and reference lists were hand-searched. Randomized controlled trials (RCTs) comparing the efficacy of 2 or more opioid analgesics for acute pain in older patients (70 years) in ambulatory settings (i.e., EDs, clinics) were included. Two reviewers independently screened abstracts, assessed quality of the studies, and extracted data. **Results:** After screening titles and abstracts of 1297 citations, the full-texts of 63 studies were reviewed, and 1 study met the inclusion criteria. This study allocated patients to receive either single dose of 0.0075-mg/kg IV hydromorphone versus 0.05-mg IV morphine and found no clinical or statistical difference between the two treatments in older adults presenting to an urban academic ED with acute, severe pain. **Conclusion:** The lack of published research in this area demonstrates a significant gap in the existing knowledge of the comparative efficacy of opioid analgesics in this growing patient population and that well-designed RCTs are urgently needed.

**Keywords:** analgesia/opioids, elderly, systematic review

#### P058

##### **Paramedic recognition and management of anaphylaxis in the prehospital setting**

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**Introduction:** Anaphylaxis is a life-threatening condition that paramedics are equipped to treat effectively in the field. Current literature suggests improvements in paramedic recognition and treatment of anaphylaxis could be made. The aim of this study was to compare the proportion of cases of anaphylaxis appropriately treated with epinephrine by paramedics before and after a targeted educational intervention. **Methods:** This was a retrospective medical records review of patients with anaphylaxis managed by primary or advanced care paramedics in five Emergency Medical Service areas in Ontario, before and after an educational module was introduced. This module included education on anaphylaxis diagnosis, recognition, treatment priorities, and feedback on the recognition and management from the before period. All paramedic call records (PCRs) coded as local allergic reaction or anaphylaxis during 12-month periods before and after the intervention were reviewed by trained data abstractors to determine if patients met an international definition of anaphylaxis. The details of interventions performed by the paramedics were used to determine primary and secondary outcomes. **Results:** Of the 600 PCRs reviewed, 99/120 PCRs in the before and 300/480 in the after period were included. Of the charts included, 63/99 (63.6%) in the before and 136/300 (45.3%) in the after period met criteria for anaphylaxis ( $p = 0.002$ ). Of the cases meeting anaphylaxis criteria, 41/63 (65.1%) in the before and 88/136 (64.7%) in the after period were correctly identified as anaphylaxis ( $p = 0.96$ ). Epinephrine was administered in 37/63 (58.7%) of anaphylaxis cases in the before period and 76/136 (55.9%) in the after period ( $p = 0.70$ ). Anaphylactic patients with only two-system involvement received epinephrine in 20/40 (50.0%) cases in the before period and 45/93 (48.4%) in the after period ( $p = 0.86$ ). **Conclusion:** There are gaps in paramedic recognition and management of anaphylaxis, particularly in cases of two-system involvement. These gaps persisted after the implementation of an educational intervention. Other quality interventions and periodic refreshers may be necessary to improve pre-hospital treatment of anaphylaxis. Limitations include an increase in overall cases and decrease in rate of true anaphylaxis in the after period, which may relate to better case identification after electronic PCR implementation and changes in paramedic recognition.

**Keywords:** anaphylaxis, prehospital, paramedic

#### P059

##### **Who will be ready to fly? Characteristics of successful and unsuccessful geriatric discharges from the Nanaimo Regional General Hospital emergency department through the ED2Home program**

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**Introduction:** As the baby-boomer generation ages, the number of elderly patients with complex health issues visiting emergency departments (EDs) will continue to increase. Evidence suggests elderly patients often have better health outcomes if they can be managed at home with appropriate community and primary care supports in place, rather than being admitted to hospital. ED2Home is a program that launched March 1, 2016 in the Nanaimo Regional General Hospital (NRGH) ED. It aims to assess admitted patients aged 70 and over and discharge them with community supports and follow-up. The aim of this Quality Improvement project was to evaluate how many patients were successfully discharged by the ED2Home program in its first few months, and to characterize which patients were more likely to be successfully discharged versus bounce back to the ED. **Methods:** This Quality Improvement project audited the charts of 87 patients discharged by ED2Home from June-Sept. 2016. Variables examined included the following: age, gender, chief complaint, mobility status,

living situation, which ED2Home health care provider (RN vs. MD) to facilitate discharge, whether patient had a family physician, and resources used (ex. pharmacy, physiotherapy, occupational therapy, etc.) to help facilitate discharge. Our evaluation was conducted by means of a retrospective chart review. Descriptive statistics were derived for variables of interest. **Results:** There were 87 patients discharged home by the ED2Home whose charts were reviewed. 48 (55%) of these patients were successfully discharged home without revisit to the NRGH ED within 30 days of discharge. 29 patients returned to the NRGH ED within 30 days of original discharge for the same original chief complaint. Patients successfully discharged were similar to those who bounced back in terms of gender and mean age. Patients who bounced back to the ED were more likely to have chief complaints of dyspnea and confusion compared to those successfully discharged. Patients who were successfully discharged had a higher proportion of patients with social admissions compared to those who bounced back to the ED within 30 days. A higher proportion of patients successfully discharged had been evaluated by the ED2Home physician (versus nursing alone) compared to patients who bounced back within 30 days. **Conclusion:** ED2Home appears to be successful at discharging patients and preventing revisit to the ED and re-hospitalization, similar to other transitional programs for the elderly that have been reviewed in the literature. Patients presenting with more complex issues, such as dyspnea and confusion, may not be as suitable for rapid discharge from the ED through this program as patients presenting with issues helped by additional allied health care supports, such as failure to thrive/social admission. Additional Quality Improvement iterations of the ED2Home program should be undertaken in the future, using these suggestions.

**Keywords:** quality improvement and patient safety, geriatrics, patient discharge

#### P060

##### **Incidence of child and youth presentations to the emergency department for addictions and mental health**

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**Introduction:** As reported by the Canadian Institute for Health Information, the rate of child and youth emergency department (ED) visits for mental health complaints increased by 50% between 2007 and 2015. Improving care for these patients has been identified as a major priority of Alberta Health Services. As part of a multi-phased approach to improving care, the Emergency and the Addiction and Mental Health Strategic Clinical Networks undertook an analysis of administrative data to define incidence in Alberta and changing trends. **Methods:** The data analyzed included 5 different clinical information systems encompassing the 17 highest volume hospitals in Alberta, from April 2013 to March 2016. Patient encounters were included if the patient was under 25 years of age at the time of visit, and if the encounter included a CEDIS Presenting Complaint and/or an ICD-10 Primary Diagnosis relating to Addiction and/or Mental Health (AMH). A total of 54,810 patient encounters were included. Data was analyzed using descriptive statistics. Sub-group analysis was undertaken based upon age, presenting complaint, and primary diagnosis. **Results:** The incidence of children and youth presenting to an ED with an AMH complaint and an AMH primary diagnosis increased 22% and 7%, respectively, from 2013/14 to 2015/16. Admissions of patients were constant throughout this period. The largest increase in ED visits occurred among children aged 7-10, with a 60% increase in visits defined by presenting complaint and a 21% increase in primary diagnosis. The second largest

increase was in young adults aged 18-21 with a 26% increase defined by presenting complaint, and a 12% increase in primary diagnosis. Analyzed by age group, the largest increase in primary diagnosis between 2013/14 and 2015/16 was seen in Depression/Suicidal/Self Harm with a 667% increase among ages 0-6, and a 79% increase among ages 7-10. The second highest increase was for Anxiety/Situational Crisis with a 223% increase among ages 0-6, and 74% among children aged 7-10. **Conclusion:** Within Alberta there has been a substantial increase in the incidence of child and youth visits to the ED for issues of mental health and addictions. It is clear is that these changing trends are placing an increased burden on our healthcare system and necessitate strategic planning to ensure the health and wellness of our patients.

**Keywords:** child and youth, addiction and mental health

#### P061

##### **Implementing CBME in emergency medicine: lessons learned from the first 6 months of transition at Queen's University**

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**Introduction:** The specialist Emergency Medicine (EM) postgraduate training program at Queen's University implemented a new Competency-Based Medical Education (CBME) model on July 1 2017. This occurred one year ahead of the national EM cohort, in the model of Competence By Design (CBD) as outlined by the Royal College of Physicians and Surgeons of Canada (RCPSC). This presents an opportunity to identify critical steps, successes, and challenges in the implementation process to inform ongoing national CBME implementation efforts. **Methods:** A case-study methodology with Rapid Cycle Evaluation was used to explore the lived experience of implementing CBME in EM at Queens, and capture evidence of behavioural change. Data was collected at 3- and 6- months post-implementation via multiple sources and methods, including: field observations, document analysis, and interviews with key stakeholders: residents, faculty, program director, CBME lead, academic advisors, and competence committee members. Qualitative findings have been triangulated with available quantitative electronic assessment data. **Results:** The critical processes of implementation have been outlined in 3 domain categories: administrative transition, resident transition, and faculty transition. Multiple themes emerged from stakeholder interviews including: need for holistic assessment beyond Entrustable Professional Activity (EPA) assessments, concerns about the utility of milestones in workplace based assessment by front-line faculty, trepidation that CBME is adding to, rather than replacing, old processes, and a need for effective data visualisation and filtering for assessment decisions by competency committees. We identified a need for administrative direction and faculty development related to: new roles and responsibilities, shared mental models of EPAs and entrustment scoring. Quantitative data indicates that the targeted number of assessments per EPA and stage of training may be too high. **Conclusion:** Exploring the lived experience of implementing CBME from the perspectives of all stakeholders has provided early insights regarding the successes and challenges of operationalizing CBME on the ground. Our findings will inform ongoing local implementation and higher-level national planning by the Canadian EM Specialty Committee and other programs who will be implementing CBME in the near future.

**Keywords:** innovations in emergency medicine education, competency-based medical education, program evaluation