competency-based assessment required by the Royal College of Physicians & Surgeons of Canada's Competency by Design transition.
Keywords: simulation, objective structured clinical examination (OSCE), competency

P058

Improving patient safety and streamlining care at a community hospital through spread and scale of a trauma care bundle: a quality improvement pilot project

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Introduction: Non-trauma centers (NTC) and community hospitals commonly deliver medical care during the "golden hour" of trauma, which has significant implications on the health outcomes of patients. The Niagara Health System (NHS) and its 3 community NTC hospitals provide trauma care to over 100 patients annually during this critical period. NTCs lack standardized resources commonly found in trauma centers. Checklists and bundles have been effective in streamlining process to ensure health care providers provide the right care, at the right time and address critical points during patient care. A trauma care bundle was designed and implemented in the NHS as a means to improve trauma care and patient outcomes. **Methods:** A quality improvement (QI) approach was used to design, implement and evaluate a trauma care bundle at one of the NHS's community hospitals. These interventions were adapted and modified for community trauma care purposes. We piloted the trauma care bundle using rapid cycle improvements, known as Plan-Do-Study-Act (PDSA) cycles. We assessed outcome and process measures through a chart audit of all trauma care patients in the NHS from July 2015-December 2015. A safety attitudes questionnaire (SAQ) was administered to health system staff who were involved in the pilot to assess balancing measures. **Results:** Improvements to the bundle and its implementation from 4 PDSA cycles resulted in increased utilization. This continuous monitoring of the bundle and ongoing, conscious efforts to improve the intervention were used to spread and scale across all 3 sites of the NHS. 30% of patients received the trauma care bundle during phase 1 of the pilot from July 1- October 31, 2015. We are presently analyzing preliminary data to understand how the trauma care bundle impacts health outcomes and process and will present a comparative analysis between patient groups. **Conclusion:** Trauma care bundles may foster safer and more efficient patient care in community hospitals where the golden hour of trauma often occurs. This community trauma care bundle shows promising results for streamlining the care process to ensure patients receive appropriate care during the golden hour. Spread and scale of this bundle across other community hospitals will likely yield similar improvements in patient care.
Keywords: quality improvement, patient safety, trauma

P059

"Rate and See" – a pilot evaluation of a short duration atrial fibrillation pathway linking the emergency department to specialty care

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Introduction: Rapid atrial fibrillation (AF) and flutter remains a common cause of emergency department (ED) visits. Canadian guidelines recommend a rhythm control strategy for patients presenting to ED within 48 hours of arrhythmia onset or who are anticoagulated. However, up to 70% of patients spontaneously convert within 24 hours, mitigating the need for urgent cardioversion. Moreover, education, risk stratification, appropriate anticoagulation, and follow-up may be challenging in the ED setting. Therefore, direct and rapid linkage to an AF clinic was proposed to address these gaps in care. **Methods:** A pilot evaluation of a "Short Duration AF Pathway" was performed at Kelowna General Hospital, B.C., from June 2014 to Feb 2015. This care pathway–consisting of a treatment algorithm, ED order set, and referral process–was applied to patients with AF $\leq$ 48 hours or those who were anticoagulated. Patients received initial rate control medication in the ED and were referred for reassessment in a collaborative cardiologist/nurse practitioner AF clinic and seen within 24 hours. Data was collected prospectively; descriptive statistics are presented. **Results:** Twenty patients were enrolled during the pilot period. Mean age was 69 (SD = 10) years, 6/20 (30%) female, mean CHADS65 score 1.35 (SD = 1.1), with 15/20 (75%) CHADS65 $\geq$ 1. On presentation, 4/20 (20%) were taking anticoagulants and 12/20 (60%) had an AF history. All 20 patients were assessed in the AF clinic within 24 hours of referral. Upon assessment in the AF clinic, 10/20 (50%) had spontaneously converted to sinus rhythm and 5/20 (25%) were electrically cardioverted at the first AF clinic visit. The remaining 5/20 (25%) of patients were reclassified as AF of uncertain duration; one was admitted to hospital, the other four had delayed electrical cardioversion. All patients received education related to AF. No adverse events or readmissions to the ED were reported and 100% of patients with CHADS 65 $\geq$ 1 had received appropriate anticoagulation. **Conclusion:** A "Short Duration AF Pathway" is a viable alternate approach to immediate cardioversion within the ED. Potential advantages include avoiding unnecessary cardioversion, providing patient education, accessing timely specialty care, and initiating anticoagulation where appropriate.
Keywords: atrial fibrillation, atrial flutter, quality improvement

P060

Cannabinoid hyperemesis syndrome presentation to the emergency department: a two-year multi-centre retrospective study

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Introduction: Cannabinoid hyperemesis syndrome (CHS) is a paradoxical side effect of cannabis use. Patients with CHS often present multiple times to the Emergency Department (ED) with cyclical nausea, vomiting and abdominal pain, and are discharged with various misdiagnoses. CHS studies to date are limited to case series. We examined the epidemiology of CHS cases presenting to two major urban Tertiary Care Centre EDs. **Methods:** Using explicit variables, trained abstractors, and standardized abstraction forms, we abstracted data for all adults (18-55 years) with a presenting complaint of vomiting, and/or a discharge diagnosis of vomiting and/or cyclical vomiting, during a 2-year period. Inter-rater agreement was measured using a kappa statistic. **Results:** We identified 494 cases: mean age 31 years; 36% male; only 19.4% of charts specifically reported cannabis use. Among the regular cannabis users (>3 times per week), 43% had repeat ED visits for similar complaints. Interestingly, of these patients, 92% had bloodwork done in the ED, 92% received IV fluids, 89% received anti-emetics, 27% received opiates, 19% underwent imaging, 8% were admitted to hospital, and 8% were referred to the Gastroentorology service. Inter-rater reliability for data abstraction was kappa = 1. **Conclusion:** This study suggests CHS may be an overlooked diagnosis for nausea and vomiting, a factor which can possibly contribute to unnecessary investigations and treatment in the ED. Additionally, this indicates a lack of screening for CHS on ED history, especially in quantifying cannabis use and eliciting associated symptoms of CHS.

Keywords: nausea and vomiting, cannabinoid hyperemesis syndrome, cannabis

P061

Mobile digital access to a web-enhanced network (mDAWN): mHealth for type-2 diabetes self-management and implications for emergency medicine

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Introduction: Diabetes mellitus affects over 2.7 million Canadians, with 90% being Type-2 diabetes (CDA 2010). Complications of diabetes are major causes for emergency department (ED) visits, adversely affecting patients' health and costing the health system. Improving diabetes self-management can lead to avoidance of ED visits and revisits after discharge. Recent developments in mobile Health (mHealth), such as home health monitoring with sensors, social media, and text messaging, have shown promise in supporting patients in chronic disease self-management. This project tested the feasibility of these tools to support self-management for people with type-2 diabetes. **Methods:** Forty-three people with type-2 diabetes took part in a three month program that provided: health information via text messages, online access to curated resources and a facilitated discussion board, and access to wireless monitoring devices. Participants were outfitted with a wireless blood pressure monitor and weight scale, standard blood glucose monitor, and online access to their physiological data. Data collected included pre and post-self-reported health measures, tracking of physiological changes, website and discussion board use, cost survey, and interviews. **Results:** Participants reported significantly less health distress and an increase in diabetes empowerment. HbA1c levels decreased from an average of 7.41 to 6.77. Average weight and blood glucose also decreased over the study period. Interview and cost survey findings revealed most participants felt mDAWN provided good value; 78% expressed interest in continuing all or parts of the program. Interview findings revealed that participants developed self-management routines, and experienced increased self-awareness of, and ownership over, their health achievements. **Conclusion:** mHealth tools provided participants with their own physiologic information, connection with peers, and evidence informed advice. Participants highly valued this combination and improved their self-management and health outcomes. Equipping patients with similar tools for self-management post ED discharge holds great promise for decreasing revisits and improving health outcomes. This study has stimulated a clinical trial now underway to evaluate the effectiveness of home monitoring to facilitate the transition of patients between acute care and community settings.

Keywords: technology, diabetes, monitoring

P062

Impact of pharmacist-led medication review in the emergency department on downstream health services utilization

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Introduction: Adverse drug events are a leading cause of Emergency Department (ED) visits and unplanned admissions. Up to 50% are misdiagnosed in the ED and on hospital wards leading to treatment delays. Our main objective was to evaluate the effect of pharmacist-led medication review in high-risk ED patients on the number of days in-hospital. Our hypothesis was that early pharmacist-led medication review may reduce the number of days spent in-hospital. **Methods:** We evaluated a quality improvement program that was implemented in three British Columbian EDs. During a 12-month period, nurses identified consecutive patients at high-risk for adverse drug events using a clinical decision rule integrated into triage algorithms. Clinical pharmacist research assistants enrolled consecutive eligible high-risk patients, and systematically allocated them to medication review or control. In the intervention group, pharmacists collected best possible medication histories, reviewed medications for appropriateness and adverse drug events, and communicated review results to patients and physicians. In the control group, nurses collected best-possible medication histories, and physicians referred patients to the ED pharmacist as needed. Ongoing care was determined by physicians who were not blinded to group allocation, but were unaware of the evaluation. We assessed outcomes using administrative health databases. The primary outcome was the number of days spent in-hospital over 30 days. We used inverse propensity score weighted regression modeling to assess the relationship between medication review and health outcomes. The sample size was limited by the duration of the quality improvement program. **Results:** Among 10,807 patients 6,416 received medication review in the ED and 4,391 usual care. The groups were balanced in terms of baseline characteristics. The median number of hospital days was 0.48 days (95% confidence interval [CI] 0.00-0.96) less in the medication review group compared to usual care ($p = 0.058$). The difference was 0.60 days (95% CI 0.06-1.17; $p = 0.03$) less among patients under 80 years old. There was no effect on ED revisits, number of admissions and readmissions, or mortality. **Conclusion:** Medication review was associated with a trend in reduced hospital-bed utilization. While limited by lack of randomization, our evaluation suggests that ED pharmacists may impact subsequent resource utilization.

Keywords: adverse drug event, patient safety, medication review

P063

Is triage score a valid measure of emergency department case mix?

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Introduction: In the Canadian province of Alberta, (pop. 4,227,879), the publicly-funded health care system uses the five level Canadian Triage and Acuity Scale (CTAS), to prioritize emergency department (ED) patients. Health system decision makers and policy makers currently use CTAS as an isolated metric to describe ED patient case-mix and to compare EDs. **Methods:** Using the National Ambulatory Care Reporting System dataset, we reviewed the distribution of patient CTAS scores and the proportion of inpatient admissions by CTAS level for the 16 highest volume Alberta hospital EDs during FY 2013/2014. **Results:** Collectively, the EDs received 1,027,976 patients, with 1%, 18%, 44%, 30% and 7% classified as CTAS 1-5, respectively. The proportions by CTAS level ranged from 0.2% to 2.8% in CTAS 1; 3.3% to 33.3% in CTAS 2; 29.1% to 54.1% in CTAS 3; 16.7% to 49.0% in CTAS 4; and 3.1% to 12.3% in CTAS 5. Admission proportions by CTAS level ranged from 43.9% to 75.2% in CTAS 1; 18.9% to 42.1% in CTAS 2; 5.4% to 24.7% in CTAS 3; 0.8% to 9.3% in CTAS 4; and 0.1% to 9.1% in CTAS 5. **Conclusion:** Inter-hospital differences in CTAS acuity distributions reflect triage variability and real differences in case-mix. Wide variation in admission proportions by CTAS level reflects differing admission thresholds between sites, but also suggest intra-level differences in patient severity, comorbidity and complexity. Triage levels cannot be used as an isolated metric to describe and

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