

Keywords: asymptomatic bacteriuria, quality improvement and patient safety, urine cultures

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Using an ambulatory zone to improve physician initial assessment times in a tertiary care hospital emergency department

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Background: Increasing Emergency Department (ED) stretcher occupancy with admitted patients at our tertiary care hospital has contributed to long Physician Initial Assessment (PIA) times. As of Oct 2019, median PIA was 2.3 hours and 90th percentile PIA was 5.3 hours, with a consequent 71/74 PIA ranking compared to all Ontario EDs. Ambulatory zone (AZ) models are more commonly used in community EDs compared to tertiary level EDs. An interdisciplinary team trialed an AZ model for five days in our ED to improve PIA times. **Aim Statement:** We sought to decrease the median PIA for patients in our ED during the AZ trial period as compared to days with similar occupancy and volume. **Measures & Design:** The AZ was reserved for patients who could walk from a chair to stretcher. In this zone, ED rooms with stretchers were for patient assessment only; when waiting for results or receiving treatment, patients were moved into chairs. We removed nursing assignment ratios to increase patient flow. Our outcome measure was the median PIA for all patients in our ED. Our balancing measure was the 90th percentile PIA, which could increase if we negatively impacted patients who require stretchers. The median and 90th percentile PIA during the AZ trial were compared to similar occupancy and volume days without the AZ. Additional measures included ED Length of Stay (LOS) for non-admitted patients, and patients who leave without being seen (LWBS). Clinicians and patients provided qualitative feedback through surveys. **Evaluation/Results:** The median PIA during the AZ trial was 1.5 hours, compared to 2.1 hours during control days. Our balancing measure, the 90th percentile PIA was 3.7 hours, compared to 5.0 during control days. A run chart revealed both median and 90th percentile PIA during the trial were at their lowest points over the past 18 months. The number of LWBS patients decreased during the trial; EDLOS did not change. The majority of patients, nurses, and physicians felt the trial could be implemented permanently. **Discussion/Impact:** Although our highly specialized tertiary care hospital faces unique challenges and high occupancy pressures, a community-hospital style AZ model was successful in improving PIA. Shorter PIA times can improve other quality metrics, such as timeliness of analgesia and antibiotics. We are working to optimize the model based on feedback before we cycle another trial. Our findings suggest that other tertiary care EDs should consider similar AZ models.

Keywords: patient flow, physician initial assessment, quality improvement and patient safety

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Safe anticoagulation initiation for atrial fibrillation in the emergency department (the SAFE pathway)

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Background: Atrial fibrillation (AF) is a risk for stroke. The Canadian Cardiovascular Society advises patients who are CHADS65 positive should be started on oral anticoagulation (OAC). Our local emergency

department (ED) review showed that only 16% of CHADS65 positive patients were started on OAC and that 2% of our patients were diagnosed with stroke within 90 days. We implemented a new pathway for initiation of OAC in the ED (the SAFE pathway). **Aim Statement:** We report the effectiveness and safety of the SAFE pathway for initiation of OAC in patients treated for AF in the ED. **Measures & Design:** A multidisciplinary group of physicians and pharmacist developed the SAFE pathway for patients who are discharged home from the ED with a diagnosis of AF. Step 1: contraindications to OAC, Step 2: CHADS65 score, Step 3: OAC dosing if indicated. The pathway triggers referral to AF clinic, family physician letter and follow up call from the ED pharmacist. Patients are followed for 90 days by a structured medical record review and a structured telephone interview. We record persistence with OAC, stroke, TIA, systemic arterial embolism and major bleeding (ISTH criteria). Patient outcomes are fed back to the treating ED physician. **Evaluation/Results:** The SAFE pathway was introduced in two EDs in June 2018. In total, 177 patients have had the pathway applied. The median age was 70 (interquartile range (IQR) 61-78), 48% male, median CHADS2 score 2 (IQR 0-2). 19/177 patients (11%) had a contraindication to initiating OAC. 122 patients (69%) had no contraindication to OAC and were CHADS65 positive. Of these 122 patients, 109 were given a prescription for OAC (96 the correct dose, 9 too high a dose and 4 too low a dose). 6 patients declined OAC and the physician did not want to start OAC for 7 patients. 73/122 were contacted by phone at 90 days, 15 could not be reached and 34 have not completed 90 days of follow up since their ED visit. Of the 73 who were reached by phone after 90 days, 65 were still taking an anticoagulant. To date, 1 patient who declined OAC (CHADS2 score of 2) had a stroke within 90 days and one patient prescribed OAC had a gastrointestinal bleed. **Discussion/Impact:** The SAFE pathway appears safe and effective although we continue to evaluate and improve the process. **Keywords:** anticoagulation, atrial fibrillation, quality improvement and patient safety

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The development of a standardized provincial massive hemorrhage protocol with a built-in continuous quality improvement framework

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Background: Massive hemorrhage protocols (MHPs) streamline the complex logistics required for prompt care of the bleeding patient, but their uptake has been variable and few regions have a system to measure outcomes from these events. **Aim Statement:** We aim to implement a standardized MHP with uniform quality improvement (QI) metrics to increase uptake of evidence-based MHPs across 150-hospitals in Ontario between 2017 and 2021. **Measures & Design:** We performed ongoing PDSA cycles; 1) stakeholder analysis by surveying the Ontario Regional Blood Coordinating Network (ORBCoN), 2) problem characterization and Ishikawa analysis for key QI metrics based on areas of MHP variability in 150 Ontario hospitals using a web-based survey, 3) creation of a consensus MHP via a modified Delphi process, 4) problem characterization at ORBCoN for

the design of a freely available toolkit for provincial implementation by expert working groups, 5) design of 8 key QI metrics by a modified Delphi process, and 6) identification of process measures for QI data collection by implementation metrics. **Evaluation/Results:** PDSA1-2; 150-hospitals were surveyed. 33% of hospitals lacked MHPs, mostly in smaller sites. Major areas for QI were related to activation criteria, hemostatic agents, protocolized hypothermia management, variable MHP naming, QI metrics and serial blood work requirements. PDSA3; 3 Delphi rounds were held to reach 100% expert consensus for 42 statements and 8 CQI metrics. Major areas for modification were protocol name, laboratory resuscitation targets, cooler configurations, and role of factor VIIa. PDSA4; adaptable toolkit is under development by the steering committee and expert working groups. Implementation is scheduled for Spring 2020. PDSA5; the 8 CQI metrics are: TXA administration < 1 h, RBC transfusion < 15 min, call to transfer for definitive care < 60 min, temp >35°C at end of protocol, Hgb kept between 60-110g/L, transition to group-specific RBC by 90 min, appropriate activation defined by ≥ 6 units RBC in the first 24 hours, and any blood component wastage. **Discussion/Impact:** MHP uptake, content, and tracking is variable. A standardized MHP that is adaptable to diverse settings decreases complexity, improves use of evidence-based practices, and provides a platform for continuous QI. PDSA6 will occur after implementation; we will complete an implementation survey, and design a pilot and feasibility study for prospective tracking of patient outcomes using existing prospectively collected inter-hospital and provincial databases.

Keywords: massive hemorrhage protocol, quality improvement and patient safety, resuscitation systems

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A systematic review of short-term use of therapeutic opioids for children and future opioid use disorders

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Introduction: Despite an overall decline in opioid prescriptions in Canada, healthcare visits, hospitalizations, and deaths due to opioid-related harms continue to rise for children. Clinicians urgently require high quality synthesized evidence to inform personalized decisions regarding opioid use for children. The objective of this systematic review was to examine the association between short-term therapeutic exposure to opioids and development of opioid use disorder. **Methods:** A medical librarian conducted a comprehensive search of 10 databases from inception to May 2019. Two authors independently assessed studies for inclusion. Studies were eligible if they reported primary research in English or French, and study participants had short (<14 days) or non-specific duration of therapeutic exposure to opioids before age 18 years. Primary outcome was the development of an opioid use disorder; secondary outcomes included opioid addiction, dependence, misuse, and abuse. Data extraction involved two independent reviewers utilizing a standardized form. Methodological quality was assessed using the NIH tools for observational studies. Results are described narratively. **Results:** The search identified 4,072 unique citations; 82 were selected for review, and 17 were included (3 retrospective cohort, 4 prospective cohort, and 10 cross-sectional). All studies took place in the USA. A total of 1,562,503 participants were analyzed. Nine studies were administered in schools, 3 used administrative data. While most settings were non-specific, 1 study examined opioid use in dentistry, 1 in trauma, and 1 in organized sports. One comparative

study showed an association between short-term therapeutic use and opioid misuse. Two studies showed opioid related adverse events (e.g., overdose) among cohorts exposed to short-term use. The remaining 14 studies did not specify duration of exposure; therefore, confirming whether misuse was due to short-term therapeutic exposure was not possible. **Conclusion:** A small number of studies in this review suggest an association between short-term opioid use and opioid misuse; however, further analysis is underway with consideration of methodological limitations of the individual studies (final results pending). Careful consideration of the risk and benefits of short-term opioid use should be undertaken prior to prescribing opioids. PROSPERO Registration Number: 122681.

Keywords: narcotics, opioid misuse, opioid use disorder

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First Nations emergency care visits in Alberta: Descriptive results of a retrospective cohort study

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Introduction: Emergency care serves as an important health resource for First Nations (FN) persons. Previous reporting shows that FN persons visit emergency departments at almost double the rate of non-FN persons. Working collaboratively with FN partners, academic researchers and health authority staff, the objective of this study is to investigate FN emergency care patient visit statistics in Alberta over a five year period. **Methods:** Through a population-based retrospective cohort study for the period from April 1, 2012 to March 31, 2017, patient demographics and emergency care visit characteristics for status FN patients in Alberta were analyzed and compared to non-FN statistics. Frequencies and percentages (%) describe patients and visits by categorical variables (e.g., Canadian Triage Acuity Scale (CTAS)). Means and standard deviations (medians and interquartile ranges (IQR)) describe continuous variables (e.g., distances) as appropriate for the data distribution. These descriptions are repeated for the FN and non-FN populations, separately. **Results:** The data set contains 11,686,288 emergency facility visits by 3,024,491 unique persons. FN people make up 4.8% of unique patients and 9.4% of emergency care visits. FN persons live further from emergency facilities than their non-FN counterparts (FN median 6 km, IQR 1-24; vs. non-FN median 4 km, IQR 2-8). FN visits arrive more often by ground ambulance (15.3% vs. 10%). FN visits are more commonly triaged as less acute (59% CTAS levels 4 and 5, compared to non-FN 50.4%). More FN visits end in leaving without completing treatment (6.7% vs. 3.6%). FN visits are more often in the evening – 4:01pm to 12:00am (43.6% vs. 38.1%). **Conclusion:** In a collaborative validation session, FN Elders and health directors contextualized emergency care presentation in evenings and receiving less acute triage scores as related to difficulties accessing primary care. They explained presentation in evenings, arrival by ambulance, and leaving without completing treatment in terms of issues accessing transport to and from emergency facilities. Many factors interact to determine FN patients' emergency care visit characteristics and outcomes. Further research needs to separate the impact of FN identity from factors such as reasons for visiting emergency facilities, distance traveled to care, and the size of facility where care is provided.

Keywords: First Nations