

the median following. **Discussion/Impact:** This project demonstrates that in a busy tertiary care academic hospital, an admission algorithm helped reduce ED TTD and LOS for patients with pancreatitis. This proves especially valuable when considering the potential applicability of such algorithms to other disease processes, such as gastrointestinal bleeding and congestive heart failure, among others. Future studies demonstrating this external applicability, and the impact of such decision algorithms on physician decision fatigue and within non-academic institutions, proves warranted.

Keywords: emergency department, length of stay, quality improvement and patient safety

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Variability in practice patterns in the emergency department treatment of hyperkalemia

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Introduction: Hyperkalemia is a common electrolyte disturbance associated with morbidity and mortality. Commonly used therapies for hyperkalemia include IV calcium, sodium bicarbonate, insulin, beta-adrenergic agents, ion-exchange resins, diuretics and hemodialysis. This study aims to evaluate which treatments are more commonly used to treat hyperkalemia and to examine factors which influence those clinical decisions. **Methods:** This is a retrospective chart review of all cases of hyperkalemia encountered in 2017 at a Canadian adult ED. Potassium values were classified as mild (5.5 - 6.5 mEq/L), moderate (>6.5 - 7.5 mEq/L) and severe (>7.5 mEq/L). Treatment choices were then recorded and matched to hemodynamic stability, degree of hyperkalemia and ECG findings. More statistical methods to test correlation between treatment and specific variables will be performed over the next 2 months, including logistic regression to highlight potential determinants of treatment and Chi-square tests to verify randomness and to construct 95% confidence intervals. **Results:** 1867 ED visits were identified, of which 479 met the inclusion criteria. 89.1% of hyperkalemia cases were mild, 8.2% were moderate, and 2.7% were severe. IV insulin was used in 22.1% of cases, followed by Kayexalate in 20.5%, sodium bicarbonate in 12.3%, IV calcium in 9.4%, frusemide in 7.3%, salbutamol in 2.7%, and dialysis in 1.9%. Moderate and severe hyperkalemia were associated with higher use of insulin (79.5% and 64.3% respectively), IV calcium (41% and 64.3% respectively), sodium bicarbonate (56.4% and 85.7% respectively). Bradycardia was associated with higher insulin and IV calcium use (46.7% and 33.3% respectively). Hypotension was associated with a similar increase in use of insulin and IV calcium (34.2% and 23.7% respectively). There were only 15 cases of cardiac arrest in which sodium bicarbonate and IV calcium were more frequently used (80% and 60% respectively). **Conclusion:** This study demonstrates variability in the ED management of hyperkalemia. We found that Insulin and Kayexalate were the 2 most common interventions, with degree of hyperkalemia, bradycardia and hypotension influencing rates of treatment. Overuse of kayexalate for emergent treatment of hyperkalemia is evident despite weak supporting evidence. Paradoxically, beta adrenergic agents were underutilized despite their rapid effect and safer profile. The development of a widely accepted guideline may help narrow the differences in practice and potentially improve outcomes.

Keywords: emergency, hyperkalemia, potassium

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Education innovation: Equity, Diversity, Advocacy, and Cultural Safety (EDACS) curriculum

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Innovation Concept: Upon completion of training, Canadian physicians are expected to respond to patient needs to advocate for change both within and beyond the immediate clinical environment.¹ In the current EM curriculum, residents are not explicitly taught skills necessary to engage in clinical care nor policy change that would improve the social determinants of health (SDOH) of patients. In response to this challenge, we have developed and are piloting a 2 year curriculum on “Equity, Diversity, Advocacy, and Cultural Safety (EDACS), to equip EM trainees with the knowledge and skills to advocate and influence policy - to empower residents to act on healthcare inequities rather than simply be aware of them. **Methods:** We developed the curriculum utilizing the Structural Competency paradigm, a theoretical framework within which clinical and advocacy skills to address the SDOH at a structural level can be taught and practiced. This paradigm includes five intersecting skill-sets, including recognizing the structures that shape clinical interactions, developing an extra-clinical language of structure, and imagining structural interventions. **Curriculum, Tool, or Material:** The educational intervention will consist of 8 hour-long sessions and one 3-hour long session held over a 2-year period. The 3-hour long session will consist of a walking tour of sites accessed by individuals living in poverty in the Toronto downtown core, including a homeless shelter, a needle exchange program, and others. This session will be facilitated by a physician lead, with input at each site from community organizers. Prior to the walking tour, residents will receive an introductory session outlining themes to reflect on during and after the walking tour. Hour-long sessions will be delivered by invited healthcare providers with specific clinical expertise in the topics of discussion, which will address the care of and advocacy for various marginalized populations. **Conclusion:** To our knowledge, this is the first curriculum of its kind being implemented in an EM training program in Canada. Upon completion of the curriculum, students will be able to apply the five skillsets outlined in the Structural Competency Framework to address and improve upon inequitable conditions that influence patients treated in the emergency department. We intend to use formal and informal feedback from residents, clinicians, and lecturers to refine future curriculum cycles, and hope to inform similar programs elsewhere.

Keywords: advocacy, cultural safety, innovations in EM education

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Perspectives of medical students and undergraduate students on their experience as medical scribes in the Saint John Regional Hospital Emergency Department

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Introduction: Electronic medical records (EMR) have placed increasing demand on emergency physicians and may contribute to physician burnout and stress. The use of scribes to reduce workload and increase productivity in emergency departments (ED) has been reported. This objective of this study was to evaluate the educational and experiential value of scribing among medical and undergraduate students. We asked: “Will undergraduates be willing to scribe in exchange for clinical exposure and experience?”; and, “Should

scribing be integrated into the medical school curriculum?” **Methods:** A mixed-methods model was employed. The study population included 5 undergraduate, and 5 medical students. Scribes received technical training on how to take physician notes. Undergraduate students were provided with optional resources to familiarize themselves with common medical terminology. Scribes were assigned to physicians based on availability. An exit interview and semi-structured interviews were conducted at the conclusion of the study. Interviews were transcribed and coded into thematic coding trees. A constructivist grounded theory approach was used to analyze the results. Themes were reviewed and verified by two members of the research team. **Results:** Undergraduate students preferred volunteering in the ED over other volunteer experiences (5/5); citing direct access to the medical field (5/5), demystification of the medical profession (4/5), resume building (5/5), and perceived value added to the health care team (5/5) as main motivators to continue scribing. Medical students felt scribing should be integrated into their curriculum (4/5) because it complemented their shadowing experience by providing unique value that shadowing did not. Based on survey results, five undergraduate students would be required to cover 40 volunteer hours per week. **Conclusion:** A student volunteer model of scribing is worthwhile to students and may be feasible; however, scribe availability, potentially high scribe turnover, and limited time to develop a rapport with their physician may impact any efficiency benefit scribes might provide. Importantly, scribing may be an invaluable experience for directing career goals and ensuring that students intrinsically interested in medicine pursue the profession. Medical students suggested that scribing could be added to the year one curriculum to help them develop a framework for how to take histories and manage patients.

Keywords: emergency medicine, medical education, scribe

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The use of the erector spinae plane block to decrease pain and opioid consumption in the emergency department: A literature review

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Introduction: Acute pain represents one of the most common reasons for emergency department (ED) visits. In the opioid epidemic that North America faces, there is a significant demand for novel pain control modalities that are both safe and effective. Regional anesthesia techniques have revolutionized perioperative pain management, and they are currently thought to be indicated for acute pain relief in the ED. The erector spinae plane block (ESPB) is a novel regional block that has the ability to block multidermatomal sensation, including cervical, thoracic and lumbar regions, depending on the vertebral level at which the anesthetic is injected along the erector spinae muscle. Under ultrasound guidance, the landmarks involved are easy to identify, and there are no vital structures in the immediate vicinity of the site of injection. By reviewing the literature on ESPB, this review aims to summarize all its indications and efficacy for acute pain management in the ED. **Methods:** In April 2019, PUBMED, EMBASE, MEDLINE as well as CINAHL databases were systematically searched for articles discussing the use of ESPB in the ED. In compliance with the PRISMA guidelines, the search results were selected against inclusion and exclusion criteria. Due to the novelty of the block, all types of articles were included. **Results:** Ten studies on 7 different indications have been published on the use of ESPB in the ED. It is currently most commonly used for rib and spine fractures. Other indications include, mechanical back pain, burn injuries, herpes zoster, renal colic, and acute pancreatitis. ESPB was administered at the vertebral level of region of most pain, unilaterally or bilaterally for complete dermatomal block. It was injected as a single or continuous block - in the seated, lateral, or prone position. All of the studies demonstrate a significant reduction in pain. Furthermore, it has been reported to improve respiratory function, and it has not been associated with any complications following administration. **Conclusion:** This review shows initial data on the promising effect of ESPB in acute pain management in the ED. Current evidence shows its effectiveness and safety for the most common presenting cases of pain, such as rib and spine fracture, mechanical back pain, burn injuries, herpes zoster, renal colic, as well as acute pancreatitis. ESPB is flexible in administration and relatively easy to perform under ultrasound guidance.

Keywords: opioid addiction, pain management, regional anesthesia