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Distal radial fractures: adequacy of reductions performed in the emergency department

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Introduction: Distal radial fractures (DRF) remain the most commonly encountered fracture in the Emergency Department (ED). The initial management of displaced DRFs by Emergency Physicians (EP) poses considerable resource allocation. We wished to determine the adequacy of reduction, both initially and at follow up. This data updates previously presented high level findings. **Methods:** We performed a mixed-methods study including patients who underwent procedural sedation and manipulation by an EP for a DRF. Radiological images performed at initial assessment, post-reduction, and clinic follow up were reviewed by a panel of orthopedic surgeons and radiologists blinded to outcomes, and assessed for evidence of displacement. Demographic data were pooled from patient records and included in statistical analysis. **Results:** Seventy patients were included and had follow-up completed. Initial reduction was deemed to be adequate in 37 patients (53%; 95% CI 41.32 to 64.10%). At clinic follow-up assessment, 26 reductions remained adequate; a slip-page rate of 30% (95% CI of 17.37 to 45.90). Overall 7 patients (10%; 95% CI 4.65 to 19.51%) required revision of the initial reduction in the operating room. Agreement on adequacy of reduction on post-reduction radiographs between radiologists and orthopedic surgeons was 38.6% (95% CI -38.3 to -7.4, Kappa -0.229). The statistical strength of this agreement is worse than what would be expected by chance alone. There was no association found between age, sex, or time of initial presentation and final outcomes. **Conclusion:** Although blinded review by specialists determined only half of initial EP DRF reductions to be radiographically adequate, only 10 percent actually required further intervention. Agreement between specialists on adequacy was poor. The majority of DRFs reduced by EPs do not require further surgical intervention.

Keywords: emergency department, fractures, reductions

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Parental leave policies and culture for physicians in emergency medicine

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Introduction: Medicine demands a sacrifice of physicians' personal life, but culture has slowly changed towards valuing a balanced work life. Parental leave is linked to better physical and mental health, but policies and culture surrounding parental leave are largely unstudied in the Canadian Emergency Medicine landscape. Anecdotally, experiences vary widely. This study was designed to determine what proportion of Canadian Emergency Departments have formal parental leave policies (maternity, paternity, and other ex. adoption) and what proportion of Canadian EM physicians are satisfied with their department's parental leave policies. **Methods:** Two surveys were generated; one to assess attitudes and experiences of emergency physicians, and a second survey for department chiefs assessed the policies and their features. These were approved by the UBC REB and distributed through the CAEP Research Committee. Primary outcomes were physician satisfaction with their department's parental leave policy (4-5/5 Likert Scale), and departments with a formal parental leave

policy (Y/N). **Results:** 38% (8/21) of department chiefs reported having a formal policy for maternity leave, 29% (6/21) for paternity leave, and 24% (5/21) other. The survey of Emergency Physicians revealed similar rates at 48% (90/187) maternity, 40% (70/184) paternity, 29% (53/181) other. Among physicians who were aware of them, 69% (62/90) were somewhat or very satisfied with the maternity leave policies, 58% (51/88) with paternity leave policies, and 48% (39/81) with other parental leave. Less than 10% were somewhat or very dissatisfied with any of these. Several department chiefs commented that they had never refused anyone parental leave, but have no formal policy. However, 87% (147/187) of physicians reported a formal maternity leave policy was somewhat or very important to them; similarly 80% (134/187) paternity leave. Less than 15% felt each was somewhat or extremely unimportant. **Conclusion:** Presence and type of parental leave policy varies across the country. Most physicians were satisfied with the support they had available, but the vast majority felt that a formal maternity and paternity leave policy itself was important. This study would suggest that, without actually changing practice, the introduction of a formal parental leave policy is of value. Our research group will use this data to collaborate on a template parental leave policy to be made available for this purpose.

Keywords: leadership, policy, wellness

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The impact of a pancreatitis admission algorithm on emergency department length of stay in a tertiary care academic hospital

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Background: Emergency department (ED) overcrowding is associated with a broad spectrum of poor medical outcomes, including medical errors, mortality, higher rates of leaving without being seen, and reduced patient and physician satisfaction. The largest contributor to overcrowding is access block – the inability of admitted patients to access in-patient beds from the ED. One component to addressing access block involves streamlining the decision process to rapidly determine which hospital service will admit the patient. **Aim Statement:** As of Sep 2011, admission algorithms at our institution were supported and formalised. The pancreatitis algorithm clarified whether general surgery or internal medicine would admit ED patients with pancreatitis. We hypothesize that this prior uncertainty delayed the admission decision and prolonged ED length of stay (LOS) for patients with pancreatitis. Our project evaluates whether implementing a pancreatitis admission algorithm at our institution reduced ED time to disposition (TTD) and LOS. **Measures & Design:** A retrospective review was conducted in a tertiary care academic hospital in Montreal for all adult ED patients diagnosed with pancreatitis from Apr 2010 to Mar 2014. The data was used to plot separate run charts for ED TTD and LOS. Serial measurements of each outcome were used to monitor change and evaluate for special cause variation. The mean ED LOS and TTD before and after algorithm implementation were also compared using the Student's t test. **Evaluation/Results:** Over four years, a total of 365 ED patients were diagnosed with pancreatitis and 287 (79%) were admitted. The mean ED LOS for patients with pancreatitis decreased following the implementation of an admission algorithm (1616 vs. 1418 mins, $p = 0.05$). The mean ED TTD was also reduced (1171 vs. 899 mins, $p = 0.0006$). A non-random signal of change was suggested by a shift above the median prior to algorithm implementation and one below

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