

Conclusion: Our initial results show a positive impact in regards to the process of children returning to learn and play after a concussion. Specifically, the increased communication between physician, teacher, and parent seems to benefit and improve the child's recovery process.
Keywords: concussion, interview, pediatric

P077

Predicting positive practice improvement: a model for understanding how data and self-perception lead to practice change
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Introduction: Despite studies highlighting the inaccuracies of self-assessment, practicing physicians continue to rely on self-perception to maintain clinical competence. Many approaches have been proposed to augment physician performance. In the realm of Quality Improvement (QI), Audit and Feedback (A&F) has a modest effect. Educators have proposed coaching interventions and academic constructs have invoked training for early-career clinicians. Very few of these are driven by the perceptions and the needs of the end-user - the physicians. We currently lack a model to understand physicians' perceptions of their own practice data and an understanding of the factors which would enable practice change. In this study, we sought to develop a model for data feedback which may best help physicians change practice. **Methods:** In a previous study, we conducted a needs analysis of 105 physicians in the Hamilton-Niagara area in order to understand which data metrics were most valuable to physicians. Using the survey results, we designed an interview guide that was used as a qualitative study of physicians' perspectives on A&F. By intentional sampling, we recruited 15 physicians amongst gender groups, types of practice (academic vs community) and durations of practice. We conducted this interview with all 15 participants which were then transcribed. We then performed thematic analysis and extraction of all interviews using a realist framework. These were then translated into broader themes and, by using a grounded theory framework, created a model to understand how physicians relate practice data to their own sense of self. Interviews were anonymized and no identifying data was shared as part of the interview. All interviewees consented to participation at the outset and could withdraw at any time. **Results:** Via stakeholder interviews from 15 key informants, we developed a model for the understanding of how a physician's sense of self and the nature of the data (quantity and quality) may be combined to understand the likelihood of practice change and the adoption of the change strategy. Using this model, it is possible to understand the conditions under which A&F would provide the greatest opportunity for practice change. **Conclusion:** Physician identity intersects with A&F data to shed insights on practice improvement. Understanding the core identity constructs of different physician groups may allow for increased uptake in A&F processes.
Keywords: audit and feedback, performance measurement, quality improvement

P078

Impact of vaping on lung health and visits to the emergency department: a cross-sectional study
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Introduction: Despite being legal in Canada, the vaporized liquid of vaping systems contains several chemicals presenting unknown risks

to lung health and little is known about their use in patients visiting the emergency department (ED). This study explores associations between exposure to inhaled products and respiratory presentations in the ED. **Methods:** A cross-sectional lung health survey among patients presenting to a Canadian ED was conducted, exploring the association between inhaled toxic exposures (e.g., vaping, cannabis and cigarette smoking) and visits related to respiratory symptoms. Eligible participants were ambulatory (CTAS 2 to 5), stable, adults (≥ 17 years) visiting the ED from July to November, 2019. Results are described as frequencies and percentages (categorical variables) and medians with interquartile range (IQR, continuous variables). Univariate and multivariate logistic regression models report associations as odds ratios (OR) with 95% confidence intervals (CIs). The Health Research Ethics Board approved the study. **Results:** From 1433 eligible patients, 1024 (71%) completed the survey. The median age was 43.5 (IQR: 29, 60), and 51% were female. Overall, 177 (17%) reported ≥ 1 respiratory symptoms and 83 (8%) reported using any vaping products. In a univariate regression analysis, exposure to vaping was positively associated with ED visits related to respiratory symptoms (OR 2.11, 95% CI: 1.26 to 3.54). In the multivariate model, vaping and a previous diagnosis of ≥ 1 respiratory conditions showed positive association with respiratory-related ED visits (OR 1.86, 95% CI: 1.03 to 3.33; and OR 2.13, 95% CI: 1.50 to 3.02, respectively). There was evidence of an additive effect of the combined exposure to cigarettes and vaping and respiratory-related ED visits (OR 3.22, 95% CI: 1.61 to 6.43). Smoking cannabis and cigarettes alone were not associated with increased risk of respiratory-related visits. **Conclusion:** Using vaping products increased the occurrence of respiratory-related ED visits, particularly in people with pre-existing lung conditions. A dose-response relationship exists where the risk is highest in patients inhaling a combination of toxins. Contrary to previous assumptions, the use of vaping products has a negative impact on lung health.

Keywords: adverse effects, e-cigarettes, vaping

P079

Clinical handover from emergency medical services to the trauma team: A gap analysis
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Background: Clinical handover between emergency medical services (EMS) and the hospital trauma team can be subject to errors that may negatively affect patient care. Thus far, there has been limited evaluation of the quality of EMS handover. As such, we sought to characterize handover practices from EMS to the trauma team, identify areas for improvement, and determine if there is a need for standardization of current handover practices. **Aim Statement:** Identify areas for improvement in handover from EMS to the trauma team, specifically examining handover content, structure, and discordances between different team members regarding handover expectations. **Measures & Design:** Data were prospectively collected over a nine week period by a trained observer at Canada's largest level one trauma centre. A randomized scheduled was used to capture a representative breadth of handovers. Data collected included outcome measures such as duration of handover, structure of the handover, and information shared, process measures such as questions and interruptions from the trauma team, and perceptions of the handover from nurses, trauma team leaders (TTLs) and EMS according to a bidirectional Likert scale. **Evaluation/Results:** Of 410 trauma team activations, 79 verbal

handovers were observed. Information was often missing regarding airway (present 22%), breathing (54%), medications (59%), and allergies (54%). Handover structure lacked consistency beyond the order of identification and mechanism of injury. Only 28% of handovers had a dedicated question and answer period. Of all questions asked, 35% were questioning previously given information. EMS returned to categories of information unprompted in 84% of handovers. The majority of handovers (61%) involved parallel conversations between team members while EMS was speaking, which was associated with a greater number of interrupting questions from the trauma team (3.15 vs. 1.82, $p = .001$). There was a statistically significant disparity between the self-evaluation of EMS handovers and the perceived quality determined by nurses and trauma team leaders. **Discussion/Impact:** At our trauma centre, we have identified the need for handover standardization due to poor information content, a lack of structure and active listening, significant information repetition, and discordant expectations between EMS, nurses, and TTLs. We intend to use our results to guide the development of a co-constructed framework integrating the perspectives of all team members on the trauma team.

Keywords: emergency medical services, handover, quality improvement and patient safety

P080

Trauma experiences of rural emergency physicians: a self assessment

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Introduction: The purpose of this study was to identify, through self-assessment, how comfortable rural emergency medicine (EM) practitioners are in treating critically ill trauma patients, the resources available to treat such patients and their comfort with performing trauma procedures. Our goal is to enhance rural trauma care by identifying obstacles rural EM physicians face in Saskatchewan. **Methods:** This was a cross sectional survey study, emailed to family physicians practicing rural EM in Saskatchewan identified through the Saskatchewan Medical Association database. Inclusion criteria included physicians who are providing EM care currently or within the past year. Rural was assumed to be communities in Saskatchewan that were outside of Saskatoon and Regina. The survey was an anonymous self-assessment regarding demographics, training, hospital resources and comfort. **Results:** 113 physicians of the 479 rural physicians agreed to participate, 78 met our inclusion criteria. Most (67%) were from communities with less than 10,000 population, 70% had less than 300 ED visits per month. Most (68%) were less than 45 years of age. In terms of training, 57% had completed undergraduate training out of Canada and 63% had completed residency training in Canada. Most had been practicing for more than 2 years (76%). Most (59%) had current ATLS credentials, however only 37% had ever completed the EDE course. Regarding available resources, most centers had plain radiography (99%), POCUS (68%), PRBC (78%) and TXA (93%). However, fresh frozen plasma (41%) and platelets (26%) were not widely available. Comfort was measured on a Likert scale. The types of trauma that respondents were least comfortable with included pediatric (39%), vascular (46%), spine (56%) and genitourinary (60%). The types skills that participants were least

comfortable with included pericardiocentesis (19%), and surgical airway (25%). The majority had not performed Pediatric endotracheal tube insertion (79%), surgical airways (99%), pericardiocentesis (99%), central venous line placement (80%) and needle thoracostomy (71%) within the past 12 months. **Conclusion:** This self-assessment helped us identify aspects of rural trauma medicine that are the most challenging for rural practitioners. Understanding the most difficult challenges in light of the critical resources available to rural trauma medicine providers will inform future professional development initiatives.

Keywords: rural, self-assessment, trauma

P081

The summer of the e-scooter: a multicenter evaluation of the emergency department impact of rentable motorized scooters in Calgary

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Introduction: Calgary's introduction of rentable electronic scooters (e-scooters) in July of 2019 was met with wild popularity, representing the third most popular launch after Tel-Aviv and Paris. The present study aims to characterize the injury burden seen in all Calgary Emergency Departments (EDs) and Urgent Care Centres (UCCs) attributable to e-scooters since their 2019 introduction. **Methods:** We retrospectively reviewed all electronic medical records of patients presenting to Calgary EDs or UCCs with the term "scooter" in the triage note, where exclusion criteria are considered for non e-scooter injuries (e.g. non-motorized scooters). Trends in scooter injuries will be compared between April - October 2018 (control arm preceding e-scooter introduction) and April - October 2019. Injury incidence, types, patient demographics, and relative risk compared to bicycle-related injuries will be determined. Descriptive statistics will be calculated. Moreover, 33 ED visits were brought in by EMS and provide information about injury types and locations of injuries involving EMS transport. **Results:** Preliminary data reveals 540 scooter-related visits (3.10% admitted/transferred) between July 8th and September 30th 2019 (mean age of 28, 56.30% male). Conversely, the number of bicycle-related visits and motor vehicle related injuries were 1482 and 586 (9.90% and 9.70% admitted/transferred) respectively over the same time period suggesting a greater burden but likely a lower per-ride incidence of injury requiring ED or UCC care. Moreover, between July 8th to October 1st 2019, 33 e-scooter presentations involved EMS (21.21% admitted to hospital), where 12.12% involved upper extremity injury, 21.21% were lower extremity injuries, and 6.06% were head injuries (mean age of 34, 48.48% male). Conversely, estimated EMS transfers to EDs or UCCs for bicycle injuries and motor vehicle injuries were 197 and 463 respectively over the same time period. ICU admissions or fatality were not recorded. **Conclusion:** Representing the most comprehensive study of e-scooter injury patterns in Canada to date, we here demonstrate a significant injury burden attributable to e-scooters following their introduction in Calgary in 2019. Bicycle-related and motor vehicle injuries were both more prevalent in this time period, and required more EMS visits. Further characterization of injury types, injuries and comparison with injury patterns prior to e-scooter introduction is yet to be determined.

Keywords: ambulance, e-scooter, injury