

health complaints increased by 50% between 2007 and 2015. Improving care for these patients is a major priority of Alberta Health Services (AHS). As part of a multi-phased approach to improving care, the Emergency and the Addiction and Mental Health Strategic Clinical Networks (SCNs) surveyed youth who had presented to an ED for mental health or substance use concerns and their families/caregivers. **Methods:** The online survey contained closed- and open-ended questions on reasons for ED visits, expectations about and experiences during their visits, and areas for improvement. An ethics approved survey was conducted for 4 weeks. Participants were recruited across the province using an extensive array of social media platforms. For each survey, we randomly selected a sample of open-ended responses to thematically analyze to the point of informational redundancy. **Results:** The Youth survey received 992 responses and the Family survey received 553. A small number of overarching themes emerged. For both surveys, the major themes were 1) Wait times and access: participants were disappointed with lengthy wait times and services in the community. Youth said this made them question their decision to seek help and left them feeling hopeless. 2) Care provider training: participants were unhappy with the quality of care provided (e.g., lack of compassion, minimizing symptoms). They felt better training would improve care and attitudes towards mental health patients. 3) Environment: participants were uncomfortable with the lack of privacy for discussing sensitive topics; youth also requested items such as pens/paper and phone chargers to make the stay more comfortable and provide distractions. An additional theme emerged in the Youth survey regarding family involvement; participants wanted to decide how much/what information is shared with their families. Youth noted they were less likely to be honest with family present. Communication and navigation were mentioned frequently in the Family survey; participants noted the complexity of the mental health care system and felt frustrated by the lack of information to help them access additional resources. **Conclusion:** There are a number of areas in need of improvement to provide high-quality, patient-centred care to youth with mental health or substance use concerns that present to the Emergency Department. Phase II of this project will involve a review of the themes and determine priorities and strategies to address the themes that could be implemented into the workflow. **Keywords:** child, youth, addiction and mental health

LO85

Knowledge, attitudes, and practices regarding opioid use in the pediatric emergency department

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Introduction: Inadequate pain management in children is ubiquitous in the emergency department (ED). As the current national opioid crisis has highlighted, physicians are caught between balancing pain management and the risk of long term opioid dependence. This study aimed to describe pediatric emergency physicians (PEPs) willingness to prescribe opioids to children in the ED and at discharge. **Methods:** A unique survey tool was created using published methodology guidelines. Information regarding practices, knowledge, attitudes, perceived barriers, facilitators and demographics were collected. The survey was distributed to all physician members of Pediatric Emergency Research Canada (PERC), using a modified Dillmans Tailored Design method, from October to December 2017. **Results:** The response rate was 49.7% (124/242); 53% (57/107) were female, mean age was 43.6 years

(+/-8.7), and 58% (72/124) had pediatric emergency subspecialty training. The most common first line ED pain medication was ibuprofen for mild, moderate and severe musculoskeletal injury (MSK-I)-related pain (94.4% (117/124), 89.5% (111/124), and 62.9% (78/124), respectively). For moderate and severe MSK-I, intranasal fentanyl was the most common opioid for first (35.5% (44/124) and 61.3% (76/124), respectively) and second line pain management (41.1% (51/124) and 20.2% (25/124), respectively). 74.8% (89/119) of PEPs reported that an opioid protocol would be helpful, specifically for morphine, fentanyl, and hydromorphone. Using a 0-100 scale, physicians minimally worried about physical dependence (13.3+/-19.3), addiction (16.6 +/-19.8), and diversion of opioids (32.8 +/-26.4) when prescribing short-term opioids to children. They reported that the current opioid crisis minimally influenced their willingness to prescribe opioids (30.0 +/-26.2). Physicians reported rarely (36%; 45/125) or never (28%; 35/125) completing a screening risk assessment prior to prescribing opioids. **Conclusion:** Ibuprofen remains the most common medication recommended for MSK-I pain in the ED and at discharge. Intranasal fentanyl was the top opioid for all pain intensities. PEPs are minimally concerned regarding dependence, addiction, and the current opioid crisis when prescribing short-term opioids to children. There is an urgent need for robust evidence regarding the dependence and addiction risk for children receiving short term opioids in order to create knowledge translation tools for ED physicians. Opioid specific protocols for both in the ED and at discharge would likely improve physician comfort in responsible and adequate pain management for children.

Keywords: opioids, addiction, pain

LO86

The diagnosis of concussion in pediatric emergency departments: a prospective multicenter study

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Introduction: Accurate identification of children with a concussion by emergency department (ED) physicians is important to initiate appropriate anticipatory guidance and management. In children meeting international criteria for concussion, we aimed to determine the proportion who were provided this diagnosis by the ED physician and which variables were associated with a physician-diagnosed concussion. We also compared persistent symptoms in concussion cases versus those with alternative diagnoses. **Methods:** This was a planned secondary analysis of a prospective, multicenter cohort study. Participants were children aged 5 through 17 years and met Zurich/Berlin International Consensus Statement criteria for concussion. The primary outcome was the proportion of study participants who were assigned a diagnosis of concussion by the treating ED physician. Based on available evidence, between 50% and 90% of children meeting international concussion criteria are also diagnosed by an ED physician as having a concussion. Assuming a worst case scenario that 50% of physicians would diagnose concussion, our anticipated study sample size of 2946 would be accompanied by a +2% margin of error at the 95% confidence level for the primary outcome. **Results:** Among the 2946 eligible children, 2340 [79.4% (95% CI 78.0, 80.8)] were diagnosed with a concussion by an ED physician. Twelve variables were associated with this ED diagnosis, five of which had an odds ratio (OR) > 1.5: older age (13-17 vs. 5-7 years, OR = 2.9), longer time to presentation (>16 vs. < 16 hours, OR = 2.1), nausea (OR = 1.7), sport mechanism (OR = 1.7), and amnesia (OR = 1.6). In those with physician-diagnosed concussion

versus no concussion, the frequency of persistent symptoms was 62.5% vs. 38.8% ($p < 0.0001$) at one week, 46.3% vs. 25.8% ($p < 0.0001$) at two weeks and 33.0% vs. 23.0% ($p < 0.0001$) at four weeks. **Conclusion:** Most children meeting international criteria for concussion were provided this diagnosis by the ED physician. There were five variables which increased the odds of this diagnosis by at least 1.5-fold. Relative to international criteria, the more selective assignment of concussion by ED physicians was associated with a greater frequency of persistent concussion symptoms. Nevertheless, many patients with alternative diagnoses exhibited persistent concussive symptoms at all time points. Clinicians should therefore weigh the benefits and risks of strictly applying the Zurich/Berlin international criteria versus individual discretion.

Keywords: pediatrics, concussion, diagnosis

LO87

iPad distraction during intravenous cannulation in the pediatric emergency department: a randomized clinical trial

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Introduction: Intravenous (IV) cannulation is commonly performed in emergency departments (ED), often causing substantial pain and distress. Distraction has been shown to reduce child-reported pain, but there is currently little published about the effects of using iPad technology as a distraction tool. Our primary objective was to compare the reduction of pain and distress using iPad distraction (games, movies, books of the child's choice) in addition to standard care, versus standard care alone. **Methods:** This randomized clinical trial, conducted at the Stollery Children's Hospital ED, recruited children between ages 6 to 11 years requiring IV cannulation. Study arm assignment was performed using REDCaps randomization feature. Due to the nature of the intervention, blinding was not possible for the children, parents or research and ED staff, but the data analyst was blinded to intervention assignment until completion of analysis. Pain, distress, and parental anxiety were measured using the Faces Pain Scale-Revised, the Observed Scale of Behavioural Distress-Revised, and the State Trait Anxiety Inventory, respectively. The pain scores and observed behavioural distress scores were compared using the Mann-Whitney U test. Other co-variables were analyzed using a linear regression analysis. **Results:** A total of 85 children were enrolled, with 42 receiving iPad distraction and 43 standard care, of which 40 (95%) and 35 (81%) children received topical anesthesia, respectively ($p = 0.09$). There were 40 girls (47.1%) with a mean age of 8.32 ± 1.61 years. The pain scores during IV cannulation ($p = 0.35$) and the change in pain score during the procedure compared to baseline ($p = 0.79$) were not significantly different between the groups, nor were the observed distress scores during IV cannulation ($p = 0.09$), or the change in observed distress during the procedure compared to baseline ($p = 0.44$). A regression analysis showed children in both groups had greater total behavioural stress if it was their first ED visit ($p = 0.01$), had prior hospitalization experience ($p = 0.04$) or were admitted to hospital during this visit ($p = 0.007$). A previous ED visit, however, was predictive of a greater increase in parental anxiety from baseline ($p = 0.02$). When parents were asked whether they would use the same methods to manage pain for their child, parents of the iPad group were more likely to say yes than were parents of the standard care group ($p = 0.03$). **Conclusion:** iPad distraction during IV cannulation in school-aged children was not found to decrease pain or distress more than standard care alone, but parents preferred its use. The effects of iPad distraction may have been over-shadowed by potent topical anesthetic effect. Future directions include exploring iPad distraction for other age

groups, and studying novel technology such as virtual reality and interactive humanoid robots.

Keywords: pain, digital technology, distress

LO88

Bronchiolitis management in Calgary emergency departments

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Introduction: Bronchiolitis is a viral respiratory infection and the most common reason for hospitalization of infants. Despite evidence that few interventions are beneficial in patients with bronchiolitis, other studies would have shown that a significant proportion of patients undergo various forms of low value care. This objective of this project was to 1. establish baseline management of bronchiolitis in the Calgary Zone, and 2. deliver audit and feedback (A&F) reports to pediatric emergency physicians (PEP) to identify opportunities and strategies for practice improvement. **Methods:** This retrospective cohort study included all patients 12 months old that presented to a Calgary emergency department or urgent care center with a diagnosis of bronchiolitis from April 1, 2013 to March 31, 2017. Using data from various electronic health data sources, we captured age, vital signs, CTAS, common therapeutic interventions (bronchodilators, steroids, antibiotics) and investigations (chest x-ray (CXR), viral studies, antibiotics). Results were stratified by site and by admission status. Descriptive statistics were used to report baseline characteristics and interventions. Interhospital ranges (IHR) were provided to compare different hospitals in the zone. For the A&F component of the project, consenting PEP received a report of both their individual and peer comparator data and an in-person multi-disciplinary facilitated feedback session. **Results:** We included 4023 patients from all 6 sites (range from 28 to 3316 patients). Admission rates were 21.7% (IHR 0-29%). Mean age was 5.4 months old. Bronchodilator use was 27.0% (IHR 21-41%). 22.0% of patients received a CXR (IHR 0-57%) and 30.3% had viral studies done (IHR range 0.8-33%). PEP had higher usage of viral studies (30% vs. 5.7%), whereas non-PEP had higher CXR usage (46.2% vs. 23.4%). 41 of 66 PEP consented to receive their individual A&F reports (62%). In the facilitated feedback session PEP 1. identified two areas (bronchodilators and viral studies) where improvements could be made and 2. discussed specific strategies to decrease practice variation and minimize low value care including development of a multi-disciplinary care pathway, alignment with in-patient management, education and repeated A&F reports. **Conclusion:** Significant variability exists in management of patients with bronchiolitis across different hospitals in our zone. A facilitated feedback session identified areas for improvement and multi-disciplinary strategies to reduce low value care for patients with bronchiolitis. Future phases of this project include repeated data in 6 months and implementation of a provincial care pathway for the management of bronchiolitis.

Keywords: bronchiolitis, low value care, audit and feedback

LO89

The effectiveness of video discharge instructions for acute otitis media in children: a randomized controlled trial

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Introduction: In children, acute otitis media (AOM) pain is undertreated. We sought to determine if video discharge instructions were