

following: taking notes, eating, only reading). Both groups showed significant improvements in their test scores (Asthma: 22% improvement, Toxicology: 29%; $p < 0.01$ for both), with blog posts demonstrating a larger but non-significant difference (RM-ANOVA, Topic*Modality $F(1,59) = 0.001$, $p = 0.973$). **Conclusion:** This study suggests that podcasts and blog posts significantly improve medical student knowledge retention to a similar degree, but differ in usage conditions.

Keywords: medical education, podcast, blogs

MP29

Did the Canadian Pediatric Society policy statement in 2007 impact trampoline-related injuries in Halifax, Nova Scotia?

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Introduction: The Canadian Hospitals Injury Reporting and Prevention Program (CHIRPP) found a significant rise in trampoline-related injuries from 1999-2005, many of which required hospitalization. In 2007 and again in 2013, the Canadian Pediatric Society (CPS) recommended against the recreational use of trampolines at home. The purpose of this study was to evaluate the impact of this policy statement on trampoline-related injuries in Halifax, Nova Scotia. **Methods:** Trampoline injury data was obtained from the CHIRPP database at the IWK Health Centre, the paediatric referral hospital for the Maritimes. The data was stratified according to the timing of the CPS policy statement (before: 2001-2006, after: 2008-2013 and after reaffirmation 2013-2015). Data variables included mechanism, site, nature and context of injury. The data were evaluated using SPSS and chi-squared tests. **Results:** Since the 2007 CPS policy statement, an average of 162 per 10,000 ED visits at the IWK Health Centre were the result of trampoline-related injuries compared to 95 per 10,000 pre-policy. The majority of injuries (76-80%) occurred in children 5-14 years of age. Recreational use at home in the yard was the most common location of the accident (78-88%), with most injuries occurring on the trampoline mat itself (83-85%) due to incorrect landing (32-35%), falls (21-27%), or being struck by a person or object (24-25%). Soft tissue injuries (15-17%), sprains (19-22%) or fractures (40-46%) to the elbow (11-12%), forearm (5-9%) or ankle (19-21%) continued to be the most common nature and sites of injuries. The injury data before compared to after the CPS policy statement did not differ significantly in gender, the mechanism of injury, the type of injury, or body part involved (p -value > 0.05). There was a significant difference in the number of injuries between age groups post-policy, with more occurring in children less than 4 and between the age of 10-14 ($p < 0.009$). Moreover, where the trampoline injury was located was also significantly different post-policy with more injuries occurring in sports/recreational facilities ($p < 0.001$). **Conclusion:** Trampolining is a high-risk activity with injuries occurring predominantly in children and youth. Despite the recommendations brought forth by the CPS, trampoline-related injuries remain an important source of pediatric injuries at the IWK Health Centre in Halifax, Nova Scotia.

Keywords: pediatrics, injury prevention, Canadian Paediatric Policy

MP30

Validation of the 4AT questionnaire in the emergency department

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Introduction: Delirium is a very prevalent cognitive impairment in elderly inpatients, but it often goes undetected, especially in the

emergency department (ED). The tools currently available to screen or diagnose patients at risk of delirium are very time-consuming and are impossible to systematically perform in the ED environment. For this reason, short tests are necessary to screen for delirium in this fast-paced setting. The objective of this study was to evaluate the performance of the French version of the Rapid Assessment Test for Delirium (4AT) for the detection of delirium and cognitive impairment in older patients. The 4AT takes less than 2 minutes to administer, which is a great advantage over the others tests. **Methods:** The study was conducted in four emergency departments across the province of Québec. Participants were independent or semi-independent patients aged 65 and older, admitted to hospital and who had an 8-hour exposure to the ED. The Telephone Interview for Cognitive Status (TICS) was administered at the initial interview and the Confusion Assessment Method (CAM) as well as the 4AT were administered to patients twice a day during their ED or hospital stay. The 4AT's sensitivity and specificity were compared to that of the CAM (for delirium), and to that of the TICS (for cognitive impairment). **Results:** 324 patients were included in the study, with a mean age of 76 years old. Among the recruited participants, 21 (6.5%) had a prevalent delirium according to the CAM, and 30 (10.2%) had an incident delirium. According to the 4AT, 48 patients (14.9%) had cognitive impairment and 81 (25.2%) had a prevalent delirium. According to the TICS, 87 patients (29.2%) have cognitive impairment. The 4AT has a sensitivity of 68.4% (IC 95% : 47,5-89,3) and a specificity of 73.2% (IC 95% : 67,8-78,7) for delirium, and a sensitivity of 50% (IC 95% : 35,9-64,1) and a specificity of 87,0% (IC 95% : 81,2-92) for cognitive impairment. **Conclusion:** The French Version of the 4AT could be a fast and reliable screening tool for delirium and cognitive impairment in ED. Further research is necessary for its validation in the ED.

Keywords: validation, rapid assessment test for delirium (4AT), seniors

MP31

The contrarian effect: how does a Choosing Wisely focused knowledge translation initiative affect emergency physician practice in a high awareness-low investigation environment?

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Introduction: We previously reported that a targeted knowledge translation (KT) intervention was associated with a trend towards increased awareness and knowledge of the Choosing Wisely Canada (CWC) emergency medicine (EM) recommendations. We wished to assess if the intervention changed physician practice, specifically looking at the imperative "do not order lumbar XRs for non-traumatic low back pain unless red flags exist". **Methods:** A departmental KT initiative was implemented in April 2016 and consisted of a 1-hour seminar reviewing the CWC-EM recommendations, access to a video cast, departmental posters, and a before and after awareness survey. The effectiveness of our intervention was assessed by analyzing the frequency of lumbar XR imaging conducted for low back pain before and after the introduction of our intervention at a tertiary teaching hospital emergency department. All patient visits for the complaint of low back pain were included. The rates of XR imaging from June 2014 to September 2014 for the pre-intervention period and June 2016 to September 2016 for the post-intervention period were collected and analyzed using Fisher exact tests. A sample size of 683 was required to detect a 5% change with an alpha of 0.05 and a power of 80%. **Results:** Baseline characteristics of patients were similar for the pre- and post-intervention periods. There was a total of 781 patient visits for low back pain in June to September 2014 and 672 in June to September 2016. The XR imaging

rate for low back pain increased from 12% (95% CI 9.9-14.5) to 16.2% (95% CI 13.6-19.2) following the intervention ($p = 0.023$). **Conclusion:** We previously demonstrated a trend towards increased awareness and knowledge of the CWC EM recommendations following a knowledge translation initiative. Baseline XR imaging rates for low back pain were lower than what has been reported. We observed that our intervention was associated with an increased frequency of imaging for low back pain. This may be due to a contrarian effect. We feel this calls into question the role of knowledge translation initiatives where physician practice already closely adheres to pre-established recommendations.

Keywords: Choosing Wisely, physician awareness, knowledge translation

MP32

The Pulmonary Embolism Severity Index (PESI) score and disposition decisions in Calgary emergency departments

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Introduction: The Pulmonary Embolism Severity Index (PESI) score predicts short-term mortality from pulmonary embolism and low-risk patients suitable for home therapy. However, it is unknown if it is a driver for disposition decisions for emergency department (ED) patients. The primary objective of this study was to define the relationship between disposition decisions and the PESI score in Calgary zone hospitals. **Methods:** The PESI score was calculated retrospectively for 576 patients presenting to one of four Calgary zone hospitals for pulmonary embolism over the last 2 years. The calculated PESI score allowed the mortality risk of each patient to be estimated for very low risk (Class I, 0-1.6% 30-day mortality rate), low risk (Class II, 1.7-3.5% 30-day mortality rate), intermediate risk (Class III, 3.2-7.1% 30-day mortality rate), high risk (Class IV, 4.0-11.4% 30-day mortality rate), and very high risk (Class V, 10.0- 24.5% 30- day mortality rate). The patients were grouped based on being admitted to the hospital for inpatient care, or discharged for outpatient care. Descriptive statistics were used to describe the data. **Results:** Of the 576 patients, 317 (55%) were discharged and 259 (45%) were admitted to the hospital for inpatient care. Among admitted patients, 20.5% were considered Class I, 29.3% were Class II, 24.3% were Class III, 17.6% were Class IV, and 8.1% were Class V. Among discharged patients, 53.9 % were Class I, 25.6% were Class II, 15.5% were Class III, 4.4% were Class IV, and 0.6% were Class V. Of the 25 very high-risk (Class V) patients, 2 (8.0%) were discharged from the ED and treated as outpatients. Of the 223 very low risk (Class I) patients, 171 (76.7%) were discharged and 52 (23.3%) were admitted to hospital. **Conclusion:** A significant percentage of pulmonary embolism patients admitted to Calgary Zone hospital wards are PESI low risk (29.3%) or very low risk (20.5%). Implementation of a PESI score-based disposition pathway could improve the safety, cost-effectiveness and quality of ED disposition decisions for PE.

Keywords: pulmonary embolism, admission avoidance, clinical decision rules

MP33

A systematic review of the psychometric properties and diagnostic performance of instruments to identify mental health and substance use problems among children in the emergency department

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Introduction: The objective of this systematic review was to investigate the psychometric properties and diagnostic performance of instruments

used in the emergency department to identify pediatric mental health and substance use problems. **Methods:** A search of seven electronic databases and the grey literature was conducted. Studies assessing any instrument to identify and or diagnose mental illness, emotional or behavioural problems, or substance use disorders in pediatric patients with presentations for mental health or substance use issues were considered eligible for inclusion. Two independent reviewers judged the relevance and study quality of the studies. A descriptive analysis of the outcomes was reported. **Results:** From 4832 references, 14 studies were included. Eighteen instruments were evaluated for identifying suicide risk, alcohol use disorders, mood disorders, and ED decision-making. The HEADS-ED has good inter-rater reliability ($r = 0.785$) for identifying general mental health problems and modest evidence for ruling out patients requiring hospital admission (positive likelihood ratio, $LR^+ = 6.30$). The internal consistency varied for tools to screen for suicide risk ($\alpha = 0.46-0.97$); no tools have both high sensitivity and high specificity. The Ask Suicide-Screening Questionnaire (ASQ) is highly sensitive (98%) and provides strong evidence to rule out risk (negative likelihood ratio, $LR^- = 0.04$). Among tools to screen for alcohol use disorders, a two-item tool based on DSM-IV criteria was found to be the most accurate in identifying patients with a disorder (area under the curve: 0.89), and has modest evidence to rule in and rule out risk ($LR^+ = 8.80$, $LR^- = 0.13$). **Conclusion:** Reliable, valid, and accurate instruments are available for use with pediatric mental health ED visits. Based on available evidence, emergency care clinicians are recommended to use the HEADS-ED to rule in ED admission, ASQ to rule out suicide risk, and DSM-IV two-item tool to rule in/rule out alcohol use disorders.

Keywords: pediatrics, mental health, emergency department

MP34

Assessment of pain management during transport of intubated patients in a prehospital setting

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Introduction: While methods have been developed to assess pain and provide analgesia to hospitalized intubated patients, little is known about current EMS practices in providing similar care during air and land medical transports. Therefore, we sought to determine if opioid analgesia is provided to intubated patients during transportation in out-of-hospital setting. **Methods:** We conducted a health record review examining electronic records of intubated patients transported by Ornge in 2015. Ornge is the exclusive provider of air and land transport of critically ill patients in Ontario, Canada with over 18,000 transports per year. We identified cases using Ornge's database and selected intubated patients meeting inclusion criteria. A standardized data extraction form was piloted and used by a single trained data extractor. The primary outcome was frequency of administration and dose adequacy of an opioid analgesic. Secondary outcomes included: choice of analgesics used (fentanyl, hydromorphone or morphine), adverse events, and impact of age, sex, or reason for transfer on pain management. We present descriptive statistics. **Results:** Our strategy identified 500 potential cases, of which 448 met our inclusion criteria. Among those 448 patients, 154 (34.4%) were females, 328 (73.4%) received analgesia and 211 (64.3%) received more than one dose during transport (median frequency of 2 doses, IQR = 1 to 3). The average transport time was 148 minutes and repeated dosing (>1 repeat dose) occurred primarily (45.5%) in transports of over 180 minutes. Fentanyl was the most commonly used analgesic (97.6%) and most commonly used dose was