

MP26**Rate and outcome of incidental findings among abdominal computed tomography scans in the emergency department**

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Introduction: With the increased accessibility of computed tomography (CT), use in the emergency department has increased. Increased use has led to a reduction in missed diagnoses but also an increase in radiation burden and the increased likelihood of incidental findings. In this study, we sought to characterize the use of abdominal CTs at an academic tertiary center in order to quantify the rate and clinical significance incidental findings. **Methods:** This was a retrospective chart review of radiological database of all abdominal CT ordered by the emergency department from January 1st to March 21st 2015. Incidental findings requiring follow up were defined by the American college of radiology guidelines. Clinically significant incidental findings were defined as those that resulted in a finding of malignancy or comparably serious disease. Abdominal CTs were excluded if they were ordered together with CT thorax. The data was abstracted by one trained reviewer using a standardized data collection sheet and 10% of the data was verified by a second reviewer. Inter-rater reliability reported by Kappa statistic. Data were reported as mean and standard deviation. A sample size of 770 was calculated based on an expected difference in prevalence between significant and non-significant incidental findings of 80% ($\alpha = 5\%$, Power = 90%). **Results:** A total of 1882 imaging studies were included (56.3% female, age 59.4 years (16.3), CTAS 3 (1.3). The most common presenting complaints: abdominal pain (980, 52.1%), flank pain (196, 10.4%) and nausea/vomiting (111, 6%). Indications included rule out (r/o) obstructing renal stones/colic (329; 17.5%), r/o diverticulitis/colitis (307; 16.4%) and abdominal pain not yet differentiated (283; 15.1%). The most common final diagnoses as a result of CT were renal stone/colic (212, 11.3%), colitis/diverticulitis (191, 10.2%), and bowel obstruction (111, 6%). Incidental findings recommending further imaging occurred in 93 (4.9%). Of these, 43 were completed, and 15 resulted in clinically significant findings: cancer of the colon (2), lung (2), bladder (2), metastatic cancer (2), adnexa (4), endometrium (1), lymphoma (1), and venous thrombus (1). **Conclusion:** Incidental findings are far less common (5%) than previously reported (as high as 30%) and rarely clinically significant.

Keywords: abdominal computed tomography, emergency department

MP27**Costs of emergency syncope care in Canada**

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Introduction: Syncope is a common emergency department (ED) presentation and constitutes 1% of all ED visits, approximately 160,000 visits annually across Canada. Lack of standardized syncope care has economic and cost implications. Currently, emergency medical services (EMS) is over utilized, variations in ED management exist and a substantial proportion (46.5%) are hospitalized for cardiac monitoring. Our previous studies have proposed ways to reduce health care utilization through development of EMS clinical decision tool, ED risk scores and remote cardiac monitoring. We sought to: 1) Estimate costs associated with syncope care in the pre-hospital, ED and inpatient settings; and

2) Determine potential cost savings if the proposed alternate strategies were adopted. **Methods:** A prospective cohort study was conducted in five Canadian EDs from 2010-2014. We enrolled adult (≥ 16 years) syncope patients and excluded those with prolonged loss of consciousness, mental status changes, seizure, significant trauma, or alcohol/illicit drug abuse. Demographics, medical history, mode of arrival, EMS time points, reasons for hospitalization, ED and inpatient length of stay, final ED diagnosis and any serious adverse event within 30 days of index visit were collected. Descriptive and inferential statistics were used. **Results:** Out of 4,064 patients enrolled, 67.3% were transported to the ED by EMS and the average cost per event was \$262.78 (range at study sites: \$156.43-\$553.03). The average cost per ED visit was \$267.98 (range: \$174.66-\$374.95). 12.9% of the patients were admitted and the average of cost per admission was \$9,886.15 (range: \$9,715.23-\$10,277.98). Syncope is associated with an estimated total annual cost of \$257 million. In Canada, we estimate that diverting low-risk patients will save \$5 million in the pre-hospital setting and \$15 million in the ED annually, and implementing a remote cardiac monitoring strategy will save \$50 million annually. **Conclusion:** It is estimated that the proposed strategies will save \$70 million annually. This is likely an under-estimation as cost savings due to reduction in investigations related to diversion of ED patients, reduction in ED length of stay and hospitalization are unaccounted. Adoption of similar strategies will likely lead to significantly higher cost savings in countries with higher resource utilization for syncope management.

Keywords: syncope, cost analysis, resource utilization

MP28**A randomized comparative trial of the usage, knowledge retention and media preferences in undergraduate medical students using podcasts and blog posts**

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Introduction: Podcasts and blog posts are gaining popularity in Free Open Access Medical education (FOAMed). However, there remains a paucity of research comparing the two media for undergraduate medical education. This study aims to investigate if there are differences in medical students' usage conditions, knowledge retention and preferences in the two types of media (podcasts, blog posts). **Methods:** Medical students were block-randomized to either the podcast or blog post group according to their year of schooling. They completed an online assessment of their baseline knowledge on the subject matter and preferences within the various types of media. Participants then received access to learning materials and were given four weeks to complete the follow-up assessment. Simple descriptive statistical data were used to detail student preferences. Paired samples t-tests and a Repeated Measures Analysis of Variance (RM-ANOVA) were conducted to assess knowledge acquisition. A carry forward analysis was used to impute missing data from students lost to follow-up. **Results:** A total of 65 medical students participated in our study (podcasts $n = 33$, blog posts $n = 32$). The initial survey suggests that students prefer general topic discussion and "approach-to" themes (68% and 84%, respectively). 55% of students in the podcast group preferred podcasts that were less than 30 minutes. None of the blog post group preferred a shorter text, and each blog post required a mean of 25 minutes to read. Completion of at least one follow-up assessment was comparable (68% podcasts, 70% blog posts). The podcast listeners tended to engage in multiple activities while using the learning material (e.g. at least 2-3 of the following: driving, eating, chores, taking notes, exercising), while the blog readers tended to do fewer activities (e.g. only 1 of the

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