The significant percentage of patients were eligible for ECPR upon presentation to Regina Emergency Departments. Patients who were eligible had low survival rates and poor neurological outcomes, suggesting that ECPR could prove to be a valuable clinical tool that could improve patient outcomes in Saskatchewan. There were considerable differences in patient eligibility percentages based on different criterion. Differences in inclusion/exclusion criteria, modifying the expected annual number of ECPR eligible OHCA patients, could provide valuable information on required resources and planning for implementation of an ECPR program in a smaller centre, such as Regina.

**Keywords:** extracorporeal cardiopulmonary resuscitation, extracorporeal membrane oxygenation, out of hospital cardiac arrest

**P066**

**A quality improvement project to improve access to automated external defibrillators in the Niagara region community**

R. Chadwick, MD, K. Elliott, MD, R. Haworth, MD, H. Kearney, MSc, A. Laviolette, BSc, McMaster University, St. Catharines, ON

**Background:** Over 35,000 Canadians lose their lives to cardiac arrest each year. CPR and automated external defibrillator (AED) use are modifiable factors. Survival rates drop by 7-10% each minute that defibrillation is delayed, and survival rates are less than 5% after 12 minutes of ventricular fibrillation which stresses the need for bystander AED use in out-of-hospital arrests. Niagara Region lacks a publicly accessible registry of AEDs. AED access is a major focus in King County, Washington which has higher survival rates and has all AEDs registered with Emergency Medical Services. **Aim Statement:** This project aims to log 100 or more AEDs within a year into a publicly accessible registry and to connect the registry information to medical trainees in the Niagara region and all employees of the Niagara Health System involved in patient care. **Measures & Design:** PulsePoint is an application used to register AEDs within the Niagara region. PulsePoint allows users to geotag AEDs while tracking data entries. Over 16 weeks, 4 PDSA cycles tested the effectiveness of logging methods for AEDs including opportunistic logging, daily emailed reminders, and contacting organizations with high likelihood of having an AED. Information about the project and registry was shared with residents and medical students in Niagara. A second phase of cycles involves relaying information to Niagara Health system employees and the medical community. A final cycle will target a broader group of local organizations with intermediate probability of having AEDs. Primary outcome measures include the numbers of regional AEDs logged and members reached by knowledge sharing cycles. **Evaluation/Results:** PulsePoint was found to be an effective, free, publicly accessible resource to log AEDs within the Niagara region. The initial round of 4 PDSA cycles added a total of 56 new AEDs within the region, which were logged into PulsePoint app and the Excel spreadsheet. Through the fourth PDSA cycle, 136 businesses were contacted and made aware of the project and the AED application. In addition,138 health-related colleagues and medical students were contacted to raise awareness. PDSA cycles five through eight are currently ongoing or in the planning stages. **Discussion/ Impact:** Raising awareness among emergency services and sharing information about the registry to local CPR training providers will be paramount. Creating awareness of PulsePoint and installing AEDs in locations that currently lack such devices could ultimately improve cardiac arrest survival rates within Niagara Region.

**Keywords:** quality improvement and patient safety

**P067**

**Ondansetron and rehydration in pediatric gastroenteritis**

S. Léa, MD, E. Laurier, MD, M. Vasil, MD, C. Giasson, MD, S. Royer, MD, Université Sherbrooke, Chicoutimi, QC

**Introduction:** Gastroenteritis (GE) is one of the most common causes of emergency room visits, especially in pediatrics. The Canadian Paediatric Society and Choosing Wisely have issued high-grade recommendations to physicians working in the Emergency Department. It suggests, trying oral ondansetron followed by oral rehydration before installing venous rehydration in children with GE with adequate hydration or mild to moderate dehydration. This quality of medical care evaluation aims to determine if these recommendations were being applied for children aged 6 months to 12 years, with adequate hydration status or mild to moderate dehydration, who presented to the Chicoutimi emergency room between November 2016 and November 2018. **Methods:** Practice conformity was assessed according to two explicit criteria: prescription of oral ondansetron and appropriate mean of rehydration. A data collection tool was created and files were reviewed by investigators after standardization. Several secondary outcomes were assessed, including, among others, duration of symptoms, the number of vomiting and diarrhea. The hydration status was measured according to the capillary refill, feeling of skin to the touch, condition of buccal mucosa, tears, heart rate and mental status. These variables were analyzed to understand their impact on practice conformity. We excluded cases in which there was infections needing antibiotics, hypoglycemia, hemodynamic instability, no vomiting in the last 24 hours, convulsions and history of diabetes. **Results:** A total of 270 patient files were analyzed, 181 of which were included. Oral ondansetron was tried in 49 % of children. Rehydration was adequate in 55% of cases. The hydration level was written in 18% of files and the hydration status noted by the emergency room physician overestimated the dehydration score in 16% of cases. When hydration status was well assessed, adequate rehydration was observed in 63% of cases, while ondansetron was attempted in only 44% of cases. **Conclusion:** Use of oral ondansetron and adequate mean of rehydration to treat children aged 6 months to 12 years with GE in Chicoutimi emergency department is suboptimal. The difficulty of adequate dehydration assessment may be one of the causes. Concerted dehydration assessment grid and a group prescription for the administration of ondansetron during the nurse triage may constitute potential solutions.

**Keywords:** gastro-enteritis, ondansetron, pediatrics

**P068**

**Interrelationship between spatial abilities, anatomy knowledge and technical skills performance: a systematic review**

J. Langlois, MD, MSc, C. Bellemare, MSc, J. Toulouse, MIS, G. Wells, PhD, CIUSSS de l'Estrie - Centre hospitalier universitaire de Sherbrooke, Sherbrooke, QC

**Introduction:** Spatial ability has been defined as a skill in representing, transforming, generating and recalling symbolic, non-linguistic information. Two distinct human spatial abilities have been identified: visualization and orientation. A sex difference in spatial abilities favouring male has been documented. A pattern of negative effects with increasing age on spatial abilities has also been demonstrated. Spatial abilities have been correlated to anatomy knowledge assessment using practical examination, three-dimensional synthesis from two-dimensional views, drawing of views, and cross-sections in a systematic review. Spatial abilities have also been correlated to technical



https://doi.org/10.1017/cem.2020.274 Published online by Cambridge University Press

skills performance in beginners and intermediate learners in a systematic review. The objective of this study was to conduct a systematic review of the interrelationship between spatial abilities, anatomy knowledge and technical skills. **Methods:** Search criteria included 'spatial abilities', 'anatomy knowledge' and 'technical skills'. Keywords related to these criteria were identified. A literature search was done up to November 9, 2018 in Scopus and in several medical and educational databases on Ovid and EBSCOhost platforms. A bank of citations was obtained and was reviewed independently by two investigators. Citations related to abstracts, literature reviews, theses and books were excluded. Articles related to retained citations were obtained and a final list of articles was established. Methods relating spatial abilities testing, anatomy knowledge assessment and technical skills performance were identified. **Results:** A series of 385 titles and abstracts was obtained. After duplicates were removed and selection criteria applied, 11 articles were retained, fully reviewed, and subsequently excluded with reasons. **Conclusion:** No eligible articles were found in a systematic review of the interrelationship between spatial abilities, anatomy knowledge and technical skills. The outcome of future studies could help to further understand the cognitive process involved in learning a technical skill in Emergency Medicine.
**Keywords:** anatomy knowledge, spatial abilities, technical skills

**P069**

**Implementing supervised consumption service access for emergency department patients**

N. Lam, MD, R. Rosenblum, MD, T. Kaban, K. Dmitrienko, MA, MHSc, D. Oczkowski, K. Dong, MD, MSc, University of Alberta, Edmonton, AB

**Background:** Unintentional opioid overdoses in and around acute care hospitals, including in the ED, are of increasing concern. In April 2018, the Addiction Recovery and Community Health (ARCH) Team at the Royal Alexandra Hospital opened the first acute care Supervised Consumption Service (SCS) in North America available to inpatients. In the SCS, patients can consume substances by injection, oral or intranasal routes under nursing supervision; immediate assistance is provided if an overdose occurs. After a quality assurance review, work began to expand SCS access to ED patients as well. **Aim Statement:** By expanding SCS access to ED patients, we aim to reduce unintentional and unwitnessed opioid overdoses in registered ED patients to 0 per month by the end of 2020. **Measures & Design:** Between June 13-July 15, 2019, ARCH ED Registered Nurses were asked to identify ED patients with a history of active substance use who may potentially require SCS access. Nurses identified 69 patients over 43 8-hour shifts (range 0-4 patients per shift); thus, we anticipated an average of 5 ED patients per 24-hour period to potentially require SCS access. Based on this evidence of need, ARCH leadership worked with a) hospital legal team and Health Canada to expand SCS access to ED patients; b) ED leadership to develop a procedure and flowchart for ED SCS access. ED patients were able to access the SCS effective October 1, 2019. **Evaluation/Results:** From October 1 to December 1, 2019, the SCS had 35 visits by 23 unique ED patients. The median time spent in the SCS was 42.5 minutes (range 14.0-140.0 minutes). Methamphetamine was the most commonly used substance (19, 45.2%), followed by fentanyl (10, 23.8%); substances were all injected (91.4% into a vein and 8.6% into an existing IV). In this time period, there were zero unintentional, unwitnessed opioid poisonings in registered ED patients. Data collection is ongoing and will expand to include chief complaint, ED length of stay and discharge status. **Discussion/Impact:** Being able to reduce unintentional overdoses and unwitnessed injection drug use in the ED has the potential to improve both patient and staff safety. Next steps include a case series designed to examine the impact of SCS access on emergency care, retention in treatment and uptake into addiction treatment.
**Keywords:** overdose, quality improvement and patient safety, supervised consumption

**P070**

**A systematic assessment of opioid-related advertisements aimed at emergency physicians in North America**

A. Kirubarajan, BHSc, A. Dragoman, BHSc, J. Balakumaran, BHSc, T. Got, BHSc, N. Persaud, BA, BSc, MD, MSc, B. O'Neill, MD, DPhil, University of Toronto, Toronto, ON

**Introduction:** The opioid epidemic has been influenced by immense marketing campaigns produced by pharmaceutical companies. These campaigns include advertisements aimed at emergency medicine (EM) physicians, which may have influenced overprescription. This study is a part of a larger effort to systematically assess opioid ads published in major medical journals in North America. To our knowledge, this is the first study to systematically assess the volume, claims, and levels of evidence for opioid ads aimed at EM physicians. **Methods:** Up to two issues per year from 1996 to 2016 of ten major North American medical journals were hand-searched for opioid advertisements. Specifically, we assessed random samples of issues from five major North American emergency medicine journals, including Annals of Emergency Medicine, Emergency Medicine, Canadian Journal of Emergency Medicine, Emergency Medicine Journal, and American Journal of Emergency Medicine. Five generalist medical journals were assessed including Journal of the American Medical Association, New England Journal of Medicine, Canadian Medical Association Journal, American Family Physician, and Canadian Family Physician. The volume of advertisements, nature of the claims, and cited evidence were collected by independent reviewers. The referenced evidence was assessed using the Oxford Centre for Evidence-Based Medicine Levels of Evidence rubric. **Results:** Of the 269 issues across the ten journals, opioid ads compromised 95 of the 3392 pharmaceutical advertisements with 79 opioid ads available for analysis. When analysis was completed with two reviewers, inter-rater agreement was rated as 99.87 (Cohen's kappa of 0.976). 37/79 ads did not mention the addictive potential of opioids, with 60/79 not mentioning the possibility of death. The tamper potential of medications was mentioned in 27/79 ads. Positive claims included efficacy (47/79), fast-acting ability (16/79), patient preference (5/79), convenience (26/79) and reduced side effects (22/79). 26/79 cited references directly in their text. Citations were provided for a total of 19 available original studies, of which a majority (16/19) were Level 2 evidence. Upon examination of conflicts of interest, 100% (19/19) of the referenced studies were funded by a pharmaceutical company. **Conclusion:** A variety of claims were published in medical journals through opioid advertisements, which cite industry studies. Many ads did not mention key negative information, which may have influenced EM physician prescribing.
**Keywords:** advertisement, opioid