

data collection. This study sought to gain a baseline understanding of pediatric ED use in Manitoba, including child demographics, visit characteristics, variation across the province, drivers of ED use, and data completeness. **Methods:** A retrospective cohort study was conducted using administrative data from the Manitoba Centre for Health Policy, and included all children aged 0-17 who presented to a Manitoba ED between 2011/12 and 2015/16, as identified from the Emergency Department Information System (EDIS), the National Ambulatory Care Reporting System (NACRS) and physician billing claims. Frequency of use was defined as single, intermediate (2-6 visits) and frequent (7+) and regional trends in child characteristics, ED use, acuity, presenting complaints, and discharge dispositions were observed. Ordinal logistic regression will be used to identify predictors of ED use. **Results:** Overall, we were able to capture 250,620 ED visits made by 172,306 children; data sources and completeness varied by year. Provincially, children under 5 years of age were the most frequent users of the ED, and use <1 year of age was highest in the North. We observed higher use among low-income children, particularly in rural mid and north, and few differences by sex. By year, the majority of children made single-use of the ED (64.48%), while fewer were classified as intermediate (34.40%) or frequent users (1.11%). Overall, the top presenting complaints were for fever (10.27%), limb complaint/trauma (7.48%), abdominal pain (5.75%), nausea and/or vomiting (4.53%) and shortness of breath (3.68%), with variation by triage level. In rural but not urban areas, mental health assessments were a top presenting complaint and primary reason for transfer to larger centres. Results of predictors of ED use are pending. **Conclusion:** Results from this study will provide important information about the predictors and variation of ED use by region and top causes for visit, enabling us to better tailor knowledge mobilization efforts and tool development to the local context. Identified gaps in data collection are important to address to advance our knowledge and delivery of pediatric emergency care at the provincial level.

Keywords: pediatric emergency care, regional variation, knowledge mobilization

LO03

Impact of the conversion to a shockable rhythm from a non-shockable rhythm for patients suffering from out-of-hospital cardiac arrest

A. Cournoyer, MD, E. Notebaert, MD, MSc, S. Cossette, PhD, J. Morris, MD, MSc, L. de Montigny, PhD, D. Ross, MD, L. Londei-Leduc, MD, M. Iseppon, MD, J. Chauny, MD, MSc, R. Daoust, MD, MSc, C. Sokoloff, MD, E. Piette, MD, MSc, J. Paquet, PhD, Y. Lamarche, MD, MSc, M. Albert, MD, A. Denault, MD, PhD, Université de Montréal, Hôpital du Sacré-Coeur de Montréal, Institut de Cardiologie de Montréal, Montréal, QC

Introduction: Patients suffering from out-of-hospital cardiac arrest (OHCA) with an initial shockable rhythm (ventricular tachycardia or ventricular fibrillation) have higher odds of survival than those suffering from non-shockable rhythm (asystole or pulseless electrical activity). Because of that prognostic significance, patients with an initial non-shockable rhythm are often not considered for advanced resuscitation therapies such as extracorporeal resuscitation. However, the prognostic significance of the conversion to a shockable rhythm from an initially non-shockable rhythm remains uncertain. This study aimed to determine the degree of association between the conversion (or not) of a non-shockable rhythm to a shockable rhythm and resuscitation outcomes in patients with OHCA. It was hypothesized that such a conversion would be associated with a higher survival to discharge. **Methods:** The present

study used a registry of adult OHCA between 2010 and 2015 in Montreal, Canada. Adult patients with non-traumatic OHCA and an initial non-shockable rhythm were included. The primary outcome measure was survival to hospital discharge, and the secondary outcome measure was prehospital return of spontaneous circulation (ROSC). The associations of interest were evaluated with univariate logistic regressions and multivariate models controlling for demographic and clinical variables (e.g. age, gender, type of initial non-shockable rhythm, witnessed arrest, bystander cardiopulmonary resuscitation). Assuming a survival rate of 3% and 25% of the variability explained by the control variables, including more than 4580 patients would allow to detect an absolute difference of 4% in survival between both groups with a power of more than 90%. **Results:** A total of 4893 patients (2869 men and 2024 women) with a mean age of 70 years (standard deviation 17) were included, of whom 450 (9.2%) experienced a conversion to a shockable rhythm during the course of their prehospital resuscitation. Among all patients, 146 patients (3.0%) survived to discharge and 633 (12.9%) experienced prehospital ROSC. In the univariate models, there was no association between the conversion to a shockable rhythm and survival (odds ratio [OR] 1.14 [95% confidence interval {CI} 0.66-1.95]), but a significant association was observed with ROSC (OR 2.00 [95% CI 1.57-2.55], $p < 0.001$). However, there was no independent association between the conversion to a shockable rhythm and survival (adjusted OR [AOR] 0.92 [95% CI 0.51-1.66], $p = 0.78$) and prehospital ROSC (AOR 1.30 [95% CI 0.98-1.72], $p = 0.073$). **Conclusion:** There is no clinically significant association between the conversion to a shockable rhythm and resuscitation outcomes in patients suffering from OHCA. The initial rhythm remains a much better outcome predictor than subsequent rhythms and should be preferred when evaluating the eligibility for advanced resuscitation procedures.

Keywords: out-of-hospital cardiac arrest, initial rhythm

LO04

Health effects of training laypeople to deliver emergency care in underserved populations: preliminary results of a systematic review

A. Orkin, MD, MSc, MPH, J. Curran, MSc, S. Ritchie, MBA, PhD, S. van de Velde, PT, MPH, PhD, D. Vanderburgh, MD, Schwartz/Reisman Emergency Medicine Institute, Toronto, ON

Introduction: The World Health Organization recommends emergency care training for laypeople in low-resource settings, but the effects of these programs on patient outcomes and community health have not been systematically reviewed. Our objective was to identify the individual and community health effects of educating laypeople to deliver emergency care in low-resource settings. **Methods:** We conducted a systematic review to address this question: in low-resource populations (P), does emergency care education for laypeople (I) confer any measurable effect on patient morbidity and mortality, or community capacity and resilience for emergency health conditions (O), in comparison with no training or other education (C)? We searched 12 electronic databases and grey literature for quantitative studies. We conducted duplicate and independent title and abstract screening, methodological and outcomes extraction, and study quality assessment using the Effective Public Health Practice Tool. We developed a narrative summary of findings. (PROSPERO: CRD42014009685) **Results:** We reviewed 16,017 abstracts and 372 full-text papers. 38 met inclusion criteria. Most topically relevant papers were excluded because they assessed educational outcomes. Cardiopulmonary resuscitation training (6 papers) improved cardiac arrest survival and enhanced capacity to respond to cardiac arrest in rural Norway, Denmark and