

participated in all three rounds of the study. 60 active SBR projects were identified, an average of 4.3 per institution (range 0-17). 49 priorities for SBR in Canada were defined and summarized into seven priority research themes. An additional theme was identified by the senior reviewing faculty. 41 barriers and 34 facilitators of SBR were identified and grouped by theme. Fourteen SLs representing 12 institutions attended the consensus meeting and vetted the final list of eight priority research themes for SBR in Canada: simulation in CBME, simulation for interdisciplinary and inter-professional learning, simulation for summative assessment, simulation for continuing professional development, national curricular development, best practices in simulation-based education, simulation-based education outcomes, and simulation as an investigative methodology. **Conclusion:** Conclusion: This study has summarized the current SBR activity in EM in Canada, as well as its perceived barriers and facilitators. We also provide a consensus on priority research themes in SBR in EM from the perspective of Canadian simulation leaders. This group of SLs has formed a national simulation-based research group which aims to address these identified priorities with multicenter collaborative studies.

Keywords: emergency medicine, simulation

LO46

Lost to follow-up post-sexual and domestic assault: An evaluation of prevalence and correlates of cases presenting to the emergency department

F. Blaskovits, BSc, K. Muldoon, MPH, PhD, A. Drumm, BSc, T. Leach, NP, M. Heimerl, MSW, K. Sampsel, MD, MSc, University of Ottawa, Department of Emergency Medicine, Ottawa, ON

Introduction: Domestic violence (DV) and sexual assault (SA), together called sexual and gender-based violence (SGBV), are traumatic and life-changing events. Post-assault follow-up care is essential for survivor recovery through medical care, mental health functioning, and injury reassessment. The objective of this analysis was to determine the frequency of loss to follow-up (LTFU) in a SGBV population, and the characteristics most commonly associated with LTFU. **Methods:** The Sexual Assault and Partner Abuse Care Program (SAPACP) is the only Ottawa program for emergency/forensic care. Demographic and assault characteristics were abstracted from the SAPACP clinical case registry (1 Jan 2015 to 20 Dec 2017). Descriptive analyses and bivariable/multivariable logistic regression modelling assessed factors most strongly associated with LTFU using odds ratios (OR), adjusted OR (AOR), and 95% confidence intervals (CI). **Results:** Among 894 initial SAPACP visits, 482 (53.9%) were LTFU. Of those LTFU, 445 (92.3%) were female, 185 (38.4%) arrived by ambulance, 284 presented acutely (58.9%), 70 (14.5%) had substance use issues, and 82 (17.0%) were re-victimized. There were 229 (47.5%) sexual assaults, 201 (41.7%) physical assaults, and 92 (19.1%) verbal assaults. LTFU patients were more likely to arrive by ambulance (AOR: 1.09, 95% CI: 1.34-2.69), experience re-victimization (AOR: 1.94, 95% CI: 1.25-3.03), and have a substance use disorder (AOR: 1.67, 95% CI: 1.02-2.73). Those more likely to attend follow-up included sexual assault survivors (AOR: 0.37, 95% CI: 0.27-0.50) and acute presenters (AOR: 0.58, 95% CI: 0.44-0.78). **Conclusion:** Over half of patients arriving for initial SAPACP visits did not follow-up. LTFU was more likely among cases that arrived by ambulance, and those involving revictimization or substance use disorders. Follow-up is critical for maintaining mental and physical health post-trauma. While

some characteristics increased follow-up likelihood, this study has identified groups that need attention to reduce LTFU.

Keywords: domestic violence, intimate partner violence, sexual assault

LO47

Concussions in minor hockey players before and after implementation of a policy to limit body checking

N. Loewen, L. Gaudet, MSc, B. Franczak, PhD, B. Rowe, MD, MSc, University of Alberta, Edmonton, AB

Introduction: Concussions are one of the most common sports-related injuries presenting to emergency departments (EDs), and are particularly frequent among players of contact sports such as ice hockey (hockey). Studies of youth hockey players report increased concussion incidence when participating in levels of hockey that allow body-checking. In 2016, an Edmonton minor hockey organization implemented a policy to remove body checking from play for non-elite levels of Bantam (13-14 years) and Midget (15-17 years). This study aimed to evaluate the effect of this policy on occurrence of concussions in male minor hockey players. **Methods:** Alberta Health Services Sport and Recreation codes (SR = 54) were used to identify Bantam and Midget hockey players presenting to Edmonton Zone emergency departments (ED) during the 2013/2014 to 2016/2017 hockey seasons from the National Ambulatory Care Record System. Injured hockey players with a concussion were identified using International Classification of Diseases 10-CA diagnosis code S06.0. Odds ratios (OR) of concussions among total hockey injuries before (2013-2016) and after (2016-2017) the policy are reported with 95% confidence intervals (CIs). Differences were assessed using Pearson's χ^2 test. **Results:** During the study period, 1978 minor hockey players presented to an Edmonton Zone ED with a hockey-related injury, including 272 players with a concussion (14%). Most of the injuries occurred to Midget players (n = 1274). The proportions of concussion were similar before and after the policy change for players of all ages (OR = 0.78; 95% CI: 0.37 to 0.92) and for injured Bantam players (OR = 0.97; 95% CI: 0.59 to 1.55); however, there was a significant reduction in concussions as a proportion of all injuries for Midget players before and after the policy change (OR = 0.61; 95% CI: 0.36 to 1.00). **Conclusion:** In the initial year of implementation, the policy to limit body-checking to elite levels of play had mixed results. While the policy change did not result in a significant reduction in concussions overall, or for Bantam players, Midget players did experience a significant reduction in concussions after the policy change. The reasons behind these age-related differences require further investigation. Moreover, further evaluation of the policy using additional years of post-policy data, as well as hockey registration numbers, is needed to evaluate the sustainability of its effect.

Keywords: concussion, sports injuries

LO48

Similarities and differences between sports and recreation-related concussions and concussions from non-sport activities

L. Gaudet, MSc, L. Eliyahu, MD, M. Mrazik, PhD, J. Beach, MD, G. Cummings, MD, D. Voaklander, PhD, B. Rowe, MD, MSc, University of Alberta, Edmonton, AB

Introduction: Patients with concussion often present to the emergency department (ED). Although sports and recreation (SR) activities account for less than half of all adult concussions, guidelines

developed for management of SR-related concussions (SRC) are widely used for all concussion patients. This study aimed to identify whether there are clinically relevant differences in patient and injury characteristics between SRC and those occurring outside of SR activities. **Methods:** Adults (>17 years) presenting from April 2013 to April 2015 with a concussion to one of three EDs with Glasgow coma scale score ≥ 13 were recruited by on-site research assistants. Data on patient characteristics (i.e., age, sex, employment, lifestyle, relevant medical history), ED presentation (i.e., EMS arrival, hours since injury, CTAS, Glasgow Coma Scale score) and injury characteristics (i.e., activity leading to injury, loss of consciousness [LOC], signs and symptoms [scored using the Rivermead Post-Concussion Questionnaire], and health-related quality of life [from the 12-Item Short Form Health Survey [SF-12]) were collected from structured interviews and the ED chart. Dichotomous and categorical variables were compared using Fisher's exact test; continuous variables were compared using t-tests or Mann-Whitney tests, as appropriate. **Results:** In total, 248 patients were enrolled (47% male, median [IQR] age: 35 [23, 49]). Patients with SRC were younger (median: 23.5 years vs 35 years; $p < 0.001$), more likely to be a student (31% vs 8%; $p > 0.001$), and more likely to exercise regularly (89% vs 66%; $p = 0.001$). Patients with SRC were less likely to present during the daytime (66% vs. 77%; $p = 0.022$), less likely to have a history of mental health issues (18% vs 33%; $p = 0.011$) and had significantly higher median SF-12 physical components scores (55.5 [IQR: 51.4 to 57.8] vs. 53.5 [IQR: 45.5 to 56.7]; $p = 0.025$). All other characteristics were similar between the two groups. **Conclusion:** Although differences in demographics and lifestyle have been identified between patients sustaining a SRC and those concussed during other activities, injury characteristics, such as presentation acuity, proxies for severity, and signs and symptoms, were similar in both groups. Further analysis to assess whether the demographic and lifestyle differences affect clinical outcomes, such as time to symptom resolution, between these two groups is required to assess if sport-based treatment guidelines are appropriate for all patients.

Keywords: concussion, emergency department, mild traumatic brain injury

LO49

Can the HINTS exam rule out stroke in those with vertigo? A systematic review and meta-analysis

R. Ohle, MBChB, MSc, R. Montpellier, MD, V. Marchadier, MD, A. Wharton, MD, S. McIsaac, BSc, MBChB, MEd, Health Science North, Sudbury, ON

Introduction: Acute vestibular syndrome (AVS - vertigo, nystagmus, head motion intolerance, ataxia, and nausea/vomiting) is a subset of patients presenting with vertigo. They are most often due to benign vestibular neuritis but can be a sign of a vertebrobasilar stroke. The HINTS (head impulse test, nystagmus, positive test of skew) exam has been proposed as an extremely accurate bedside test to rule out stroke in those presenting with AVS. Is the HINTS exam compared to MRI sufficiently sensitive to rule out vertebrobasilar stroke in an adult population presenting to the emergency department with AVS. **Methods:** We searched in Pubmed, Medline, Embase, the Cochrane database, and relevant conference abstracts from 1968 to December 2018 and performed hand searches. No restrictions for language or study type were imposed. Relevant studies were reviewed and data was extracted by two independent reviewers. Gold standard in ruling out stroke was; Negative late acute (72 hrs-10d) cranial

MRI with DWI OR Negative early acute (0-72hrs) cranial MRI plus negative follow-up cranial MRI or clinical follow-up for TIA/stroke of ≥ 3 months. Included studies were prospective or retrospective with patients presenting with acute vestibular syndrome. Studies combined if low clinical and statistical heterogeneity. Study quality was assessed using the QUADAS tool. Random effects meta analysis using Revman 5 and SAS9.3 was performed. **Results:** 6 studies with 715 participants were included (QUADAS 12/14 SD 1.2). Average study length 5.3 years (STD 3.3 years). Prevalence of vertebrobasilar stroke ranged 9.3-76% (Mean 39.1% SD 17.1). The most common diagnosis were vertebrobasilar stroke (Mean 34.8% SD 17.1%), peripheral cause (Mean 30.9% SD 16%). Intra cerebral haemorrhage (Mean 2.2%, SD 0.5%). Neurologist/neuro ophthalmologist performed the exam in 5/6 studies. 1 study reported a kappa between emergency medicine physician and neurologist of 0.24-0.41. The HINTS exam had a sensitivity of 96% (CI 95% 0.92-0.98, I2-0%), Specificity 91.4% (CI 95% 64.5-98.4% I2 94%). Positive likelihood ratio 11.9 (CI 95% 2.9-48.8) and a negative likelihood ratio of 0.04 (CI 95% 0.01-0.14). **Conclusion:** The HINTS exam has excellent diagnostic accuracy for ruling out stroke when performed by a neurologist. The lack of ER proven diagnostic accuracy and high prevalence of serious diagnosis in those presenting with acute vestibular syndrome suggests care should be taken in ruling out central cause of dizziness in this population.

Keywords: head impulse test, nystagmus, positive test of skew (HINTS), vertigo

LO50

Can clinical examination alone rule out a central cause for acute dizziness?

R. Ohle, MBChB, MSc, A. Regis, BSc, O. Bodunde, BSc, R. LePage, BSc, Z. Turgeon, BSc, J. Caswell, PhD, S. McIsaac, BSc, MBChB, MEd, M. Conlon, PhD, Health Science North, Sudbury, ON

Introduction: The vast majority of patients presenting with dizziness to the emergency department (ED) are due to a benign self-limiting process. However, up to 5% have a serious central neurological cause. Our goal was to assess the sensitivity of clinical exam for a central cause in adult patients presenting to the emergency department with dizziness. **Methods:** At a tertiary care ED we performed a medical records review (Sep 2014- Mar 2018) including adult patients with dizziness (vertigo, unsteady, lightheaded), excluding those with symptoms >14days, recent trauma, GCS < 15, hypotensive, or syncope/loss of consciousness. 5 trained reviewers used a standardized data collection sheet to extract data. Individual patient data were linked with the Institute of Clinical Evaluation Science (ICES) database. Our outcome was a central cause defined as: ischemic stroke (IS), transient ischemic attack (TIA), brain tumour, intra cerebral haemorrhage (ICH), or multiple sclerosis (MS) diagnosed on either neurology assessment, computed tomography, magnetic resonance imaging, or diagnostic codes related to central causes found within ICES. A sample size of 1,906 was calculated based on an expected prevalence of 3% with an 80% power and 95% confidence interval to detect an odds ratio greater than 2. Univariate analysis and logistic regression were performed. **Results:** 3,109 were identified and 2,307 patients included (mean 57 years SD ± 20 , Female 59.1%, Kappa 0.91). 62 central causes (IS 56.5%, TIA 14.5%, Tumour 11.3%, MS 9.7%, ICH 6.5%) of dizziness were identified. Imaging was performed in 945(42%) and neurology assessment in 42 (1.8%). ICES yielded no new diagnoses of a central cause for dizziness. Multivariate logistic regression found 11