Introduction: Hip fractures affect over 35,000 Canadians each year. Delirium, or acute confusion, occurs in up to 62% of patients following a hip fracture. Delirium substantially increases hospital length of stay and doubles the risk of nursing home admissions and death. The primary objective of this study was to identify risk factors independently associated with acute in-hospital delirium within 72 hours of emergency department (ED) arrival for patients diagnosed with a hip fracture. **Methods:** This was a retrospective chart review of patients aged 65 years and older presenting to one of two academic EDs with a discharge diagnosis of hip fracture from January 1st 2014 to December 31st 2015. Multivariable logistic regression analysis was used to determine variables independently associated with the development of acute in-hospital delirium within 72 hours of ED arrival. **Results:** Of the 668 included patients, mean (SD) age was 84.1 (8.0) years and 501 (75%) were female. 521 (78.0%) patients received an opioid analgesic and/or femoral nerve block in the ED. The most common analgesics used in the ED were intravenous (IV) morphine (35.8%), IV hydromorphone (35.2%), or dual therapy with both IV hydromorphone and IV morphine (2.2%). Femoral nerve blocks were initiated for 36 (5.4%) patients and successfully completed in 35 (5.2%) patients in the ED. 181 (27.1%) patients developed delirium within 72 hours of ED arrival. History of neurodegenerative disease or dementia (OR: 5.7, 95% CI: 3.9, 8.4), age >75 (OR: 2.8, 95% CI: 1.4, 5.6) and absence of analgesia in the ED (OR: 2.1, 95% CI: 1.3, 3.2) were independently associated with acute in-hospital delirium. **Conclusion:** The development of in-hospital delirium is common in patients diagnosed with a hip fracture. We have identified modifiable and non-modifiable risk factors independently associated with acute in-hospital delirium, which can be identified in the ED. Clinicians should be aware of these risk factors in order to implement strategies directed at reducing the development of acute delirium. Additionally, further research is needed in order to understand the relationship between analgesia delivered in the ED and the development of delirium for patients diagnosed with a hip fracture. **Keywords:** delirium, hip fracture, risk factors

LO59

Police use of force and subsequent emergency department assessment-mental health concerns are the driving force behind ED use and choice of transport mode

C.A. Hall, MD, K. Votova, PhD, D. Eramian, MD, S. MacDonald, MD, C.G. Heyd, MD, C. Sedgwick, BSc, Island Health Authority, Victoria, BC

Introduction: We examined persons transported to hospital after police use of force to determine whether Emergency Department (ED) assessment and/or mode of transport could be predicted. **Methods:** A multi-site prospective consecutive cohort study of police use of force with data on ED assessment for individuals ≥18 yrs was conducted over 36 months (Jan 2010-Dec 2012) in 4 cities in Canada. Police, EMS and hospital data were linked by study ID. Stepwise logistic regression examined the relationship between the police call for service and subject characteristics on subsequent ED assessment and mode of transport. **Results:** In 3310 use of force events, 86.7% of subjects were male, median age 29 yrs. ED transport occurred in 26% (n = 726). Odds of ED assessment increased by 1.2 (CI 1.1, 1.3) for each force modality >1. Other predictors of ED use: if the nature of police call was for Mental Health Act (MHA) (Odds 14.3, CI 10.6, 19.2), features of excited delirium (ExD) (Odds 2.7, CI 1.9, 3.7), police-assessed emotional distress (EDP) not an MHA (Odds 2.1, CI 1.5, 3.0) and combined drugs, alcohol and EDP (Odds 1.7, CI 1.9, 3.7). Those with alcohol impairment alone were less likely to go to ED from the scene: OR 0.6 (CI 0.5, 0.7). EMS transported 55% of all patients (n = 401), although police transported ~100 people who EMS attended at the scene but did not subsequently transport. For patients brought to the ED, 70% had a retrievable chart (512/726) with a discernible primary diagnosis: 25% for physical injury, 32% for psychiatric and 43% for drug and/or alcohol intoxication. For use of force events that began as MHA calls, patient transport was more often by police car than ambulance OR 1.8 (CI 1.2, 2.5), while those with drug intoxication or ≥ 3 ExD features were more often brought by ambulance: odds of police transport 0.5 (CI 0.3, 0.9) and 0.4 (CI 0.3, 0.7). Violence or aggression did not predict mode of transport in our study. **Conclusion:** About one quarter of police use of force events lead to ED assessment; 1 in 4 patients transported had a physical injury of some description. Calls including the Mental Health Act or individuals with drug intoxication or excited delirium features are most predictive of ED use following police use of force. In MHA calls with use of force, persons are nearly twice as likely to go to ED by police car than by ambulance.

Keywords: emergency medical services, mental health, police

LO60

Validation of the PHQ-9 as a screen for depression in the emergency department

S. Barbic, PhD, W.G. MacEwan, MD, A. Leon, BSc, S. Chau, D. Barbic, MD, MSc, University of British Columbia, Vancouver, BC

Introduction: Screening for depression in the emergency department (ED) has been recommended for the last two decades. It is estimated that 1 in 5 adults presenting to the ED meet the criteria for depression, making this setting an ideal point of care for proper and early referral to general practitioners and/or specialist mental health services. One of the barriers to assessment of depression in the ED is a lack of validated tools to screen for depression in this context of use. The purpose of this study is to test the extent to which the commonly used Patient Health Questionnaire (PHQ-9) is valid and reliable to screen for depression in adults presenting to the ED. **Methods:** Adults, aged 19 years and over, presenting to an inner-city, academic ED with an acute mental health complaint (AMHC) completed a questionnaire package that included demographic questions, the PHQ-9, and 5 other questionnaires for validation purposes. Traditional and Rasch Measurement (RM) methods were applied to the data to examine how well the items: captured the 95% range ($\pm$2 logits) of the concept of interest, were reliable and valid, and met the criteria for unidimensional and invariant measurement. **Results:** Preliminary prospective data from 108/200 adults (mean age 39.7 $\pm$ 13.6 years; 65% male) completed the questionnaire package. A total of 58.9% of the sample met the criteria for moderate-severe depression (PHQ-9 $\geq$ 15), with 37% reporting thoughts of suicide and/or self-harm nearly every day for the past two weeks. Analysis of these items showed good overall fit to the Rasch model ($\chi^2 = 28.3$, $df = 18$, $p = .06$), good reliability ($r_p = 0.84$), an ordered 4-point response scale structure, excellent individual item fit, and no item bias for gender, age, level of education, or employment status. Items covered between -1.45 to 1.52 logits, spanning 74% of the targeted theoretical continuum, with gaps at each end of the range. Item #3 (trouble falling or staying asleep) was the easiest item (indicating lower depression) and Items #8 and #9 (moving slowly and thoughts of harm/suicide) were the more difficult items (indicating more severe depression). **Conclusion:** This study supports the PHQ-9 as a reliable and valid screen for depression in the ED. Incorporating standardized and uniform assessment in Canadian EDs will begin the process of advancing the role of the ED to initiate evidence-based care to optimize the outcomes of Canadians with an AMHC.

Keywords: depression, screening, Rasch measurement