our analysis. 4.1% (35/846) of trauma codes were activated after 30 minutes. Mean age was 40.8 years in the early group versus 49.2 in the delayed group p = 0.01. There was no significant difference in type of injury, injury severity or time from injury between the two groups. Patients were over 70 years in 7.6% in the early activation group vs 17.1% in the delayed group (p = 0.04). 77.7% of the early group were male vs 71.4% in the delayed group (p = 0.39). There was no significant difference in mortality (15.2% vs 11.4% p = 0.10), median length of stay (10 days in both groups p = 0.94) or median time to operative management (331 minutes vs 277 minutes p = 0.52). **Conclusion:** Delayed activation is linked with increasing age with no clear link with increased mortality. Given the severe injuries in the delayed cohort which required activation of the trauma team further emphasis on the older trauma patient and interventions to recognize this vulnerable population should be made. When assessing elderly trauma patients emergency physicians should have a low threshold to activate trauma teams.

Keywords: trauma team activation, triage

LO90

Trauma triage accuracy at a Canadian trauma centre

J. Pace, MD, B. Tillmann, MD, I. Ball, MD, R. Leeper, MD, N. Parry, MD, K. Vogt, MD, University of Western Ontario, London, ON

Introduction: Trauma teams have been shown to improve outcomes in severely injured patients. The criteria used to mobilize trauma teams is highly variable and debated. This study was undertaken to define the triage accuracy at our level 1 trauma centre and identify the criteria predictive of appropriate activations. **Methods:** A 3-month prospective observational study was performed and all patients presenting to the ER who received a trauma flag were identified. Patient demographics, vital signs, trauma team activation and criteria for activation were documented. Trauma activations were deemed appropriate if the patient met any of the following; airway intervention, needle/tube thoracostomy, resuscitative thoracotomy, ED blood product transfusion, invasive hemodynamic monitoring, central line insertion, emergent OR (<8 hours), admission to ICU, and death within 72 hours. Over and undertriage rates were calculated and a multivariate logistic regression was performed to identify activation criteria predictive of appropraite activations. The activation criteria were then modified and the prospective study was repeated to assess the impact on triage accuracy. **Results:** Between September to December 2015, 188 patients received a trauma flag. 137 patients met the activation criteria, however only 78 received a trauma team activation. 57% of patients who had TTA met the definition of appropriate activation, while 45% who met criteria for activation met the definition of appropriate. The rates of under and overtriage were 30.4% and 30.3%, respectively. Logistic regression revealed the following criteria to be predictive of appropriate activation; hypotension (OR 10.2 95% CI 2.3,45.5), arrival by HEMS (OR 3.2, 95% CI 1.4,7.6), pedestrian struck (OR 3.5, 95% CI 1.4,8.5) and fall (OR 5.1, 95% CI 1.7, 15.1). Tachycardia (OR 1.1, 95% 0.3,4.6) and high energy MVC (OR 1.4, 95% CI 0.7,3.1) were not found to be predictive. The post-modification study occured between September to December 2016. Data analysis to assess the impact of criteria alteration are currently underway and will be presented at CAEP 2017. **Conclusion:** Triage accuracy for the mobilization of a multi-disciplinary trauma team is important, both to ensure optimal patient care as well as to reduce unnecessary resource strain. Our previous criteria lead to high rates of undertriage and subsequent modifications have been made. The impact of these changes will be ascertained and presented at CAEP 2017.

Keywords: trauma team, triage, activation criteria

LO91

Repeat exposures to culprit drugs contribute to adverse drug events in emergency department patients

C.M. Hohl, MD, CM, MHSc, S. Woo, BSc(Pharm), A. Cragg, MSc, D. Villanyi, MD, BSc, M.E. Wickham, MSc, C.R. Ackerley, BA, F.X. Scheuermeyer, MD, University of British Columbia, Vancouver, BC

Introduction: Adverse drug events (ADEs), unintended and harmful events associated with medications, cause or contribute to 2 million annual emergency department (ED) visits in Canada. Australian data indicate that 27% of ADEs requiring admission are events caused by re-exposure to drugs that previously caused harm. Our **objective** was to estimate the frequency of repeat ADEs. **Methods:** We reviewed the charts of ADE patients who had been enrolled in 1 of 3 prospective studies conducted in 2 tertiary care and 1 urban community ED. In the parent studies, researchers enrolled patients by applying a systematic selection algorithm to minimize selection bias, and physicians and pharmacists evaluated patients prospectively to evaluate the causal association between the drug regimens and patient presentations. After completion of the parent studies, a research pharmacist and a physician independently reviewed the charts of ADE patients, abstracted data using electronic forms, and searched that hospital's records for previously recorded ADEs. The main outcome was a repeat ADE, defined as a same or same-class drug re-exposure, or repeat inappropriate drug withdrawal, causing a same or similar presentation as a prior ADE. Sample size was based on enrolment into the parent studies. **Results:** We reviewed the charts of 614 ED patients diagnosed with 655 ADEs. Of these, 20% (133/665, 95%CI 17.0-23.0%) were repeat events. Most repeat ADEs were moderate (61%) or severe (32%) in nature, and 33% (95%CI 25.1-41.1%) required hospital admission. The most commonly implicated drugs were warfarin (10%), hydrochlorothiazide (4%) and insulin (4%), and the most commonly implicated drug classes were antithrombotics (17%), psychotropics (12%) and analgesics (9%). Repeat ADEs commonly required clinical monitoring (59%), additional medications to treat the ADE (50%) and follow-up lab testing (35%). Overall, 61% (95%CI 51.3-70.7%) of culprit drug re-exposures were deemed potentially or definitely inappropriate. **Conclusion:** Inappropriate re-exposures to previously harmful medications cause a substantial number of recurrent ADEs, and may represent an ideal target for prevention. We were unable to search for repeat ADEs in the records of other hospitals that our patients may have visited, and could not detect ADEs that were not documented in the medical record. As a result, we likely underestimated the frequency of repeat ADEs.

Keywords: adverse drug events, patient safety, health services

LO92

Factors contributing to the development of adverse drug events treated in emergency departments

S. Woo, BSc(Pharm), A. Cragg, MSc, M.E. WickhamMSc, C.R. Ackerley, BA, D. Villanyi, MD, BSc, F.X. Scheuermeyer, MD, C.M. Hohl, MD CM MHSc, University of British Columbia, Vancouver, BC

Introduction: Adverse drug events (ADEs), unintended and harmful events associated with medications, commonly cause or contribute to emergency department (ED) presentations. Understanding provider, patient and system factors that contribute to their development may assist in developing effective preventative strategies. Our **objective** was to identify factors that contributed to the development of ADEs that caused ED presentations. **Methods:** We reviewed the charts of ADE patients enrolled in 1 of 3 prospective studies conducted in 3 tertiary care and 1 urban community ED. In the parent studies, researchers

https://doi.org/10.1017/cem.2017.152 Published online by Cambridge University Press