

management decisions such as blood transfusion (Hb <70) and use of proton pump inhibitors (PPI) also warrant evaluation. The aim of this study was to compare the timing and appropriateness of endoscopy and blood transfusion and proton pump inhibitor (PPI) use in a tertiary care setting to the standard of care. **Methods:** A retrospective cohort study was conducted to examine the management of patients presenting with UGIB to the ED in 2016 using a standard chart review methodology. TANDEM and EDIS (Emergency Department Information System) databases were queried to identify patients using specified ICD 10 codes and the CEDIS (Canadian Emergency Department Information System) presenting complaints of vomiting blood or blood in stool/melena. Outcome measures included: patient characteristics, the GBS to determine appropriateness of endoscopic intervention, diagnoses, blood transfusion indications and utilization of oral or intravenous PPIs. Data were entered into a REDCap database and analyzed using standard non-parametric statistical tests. **Results:** A total of 200 patients, 59% male (118/200), mean age 59 years (range 18 - 92 years) were included. The median GBS was 9. 79% of patients (157/200) underwent endoscopy during the hospital visit: 30% of patients with GBS 0-3 (13/43) and 80% patients with GBS 4 (125/157) underwent endoscopy 24 hours. The two most common endoscopic diagnoses were peptic ulcers (39%, 61/157) and varices (18%, 28/157), while 14% (22/157) had a normal diagnosis or mild gastritis. 174/200 patients (87%) were given IV or oral PPI in the ED whereas the remaining 26 (13%) did not receive PPI in hospital. 46% of patients (89/194) received blood transfusion, but only 51% (45/89) were administered based on the 70 g/L threshold while in 40% (36/89) of patients the less restrictive threshold of 90 g/L was used. **Conclusion:** A majority of UGIB patients presenting to a tertiary hospital ED appropriately received endoscopy 24 hours based on a GBS score 4. PPI use was appropriate but a proportion of patients received inappropriate blood transfusions.

**Keywords:** gastrointestinal bleeding, outcomes, management

### P133

**Meteorological predictors of epidemic orthopedic trauma in Calgary**  
C. Schweitzer, MPhil, BSc, D. Wang, MSc, E. S. Lang, MD, CM, University of Calgary, Calgary, AB

**Introduction:** On March 16 2017, emergency departments and urgent care centres (collectively, EDs) in Calgary saw 3 times the number of fall-related ED visits, and 8 times the number of ED orthopedic consultations and admissions than the daily average for March 2014-2016. Fall-related injuries have significant associated morbidity and burden of disease, as well as cost to the health care system, caregivers and society. The purpose of this study was to use regression analysis to generate best fit models and identify weather and temporal variables which predict the frequency of fall-related ED visits, orthopedic consultations and admissions in winter (November-March). **Methods:** Daily number of ED visits, orthopedic consults, and orthopedic admissions for presenting complaint of Lower Extremity Injury, Upper Extremity Injury, or with an ED diagnosis of Fracture or Fall, were obtained for winter months from November 1 2013 to March 31 2017 from the Alberta Health Services ED database. Weather data was obtained from Environment Canada. Linear and multiple regression were performed to evaluate the predictive value of individual weather and temporal parameters, and derive the best-fitting model to predict the number of ED visits, orthopedic consultations, and orthopedic admissions. **Results:** Individual predictive factors ( $p < 0.05$ ) were month, temperature, overnight temperature drop from  $>0\text{C}$  to  $<0\text{C}$ , day of the week, amount of snow on the ground at 05:00, post-chinook day (chinooks are a warm winter wind in Calgary that can cause large temperature swings), maximum

wind gust speed, and presence of precipitation. The best-fit multi-variable models predicting fall-related ED visits (F-stat = 15.36,  $R^2 = 0.171$ ), orthopedic consults (F-stat = 6.369,  $R^2 = 0.048$ ), and orthopedic admissions (F-stat = 8.658,  $R^2 = 0.126$ ) were statistically significant (probability of F-statistics all  $< 0.0001$ ). **Conclusion:** This study is, to the best of our knowledge, the first to use multiple regression to compute models using weather and temporal variables that can predict fall-related ED visits, orthopedic consults and admissions. This information could be used to alert the population regarding an increased fall and fracture risk ahead of the weather occurrence, as well as municipal snow and ice clearing services, who may be able to mitigate that risk. The ability to predict the frequency of fall-related injuries could enable EDs, EMS, orthopedic services, and hospitals to adjust resource and staffing allocation in anticipation of increases in fall-related injuries.

**Keywords:** orthopedic, weather, fall

### P134

**Escape game as a theatre-based simulation for teamwork skills training in undergraduate medical education**

A. V. Seto, BHSc, MD, University of Calgary, Calgary, AB

**Introduction:** Teamwork skills are essential in emergency presentations. When training medical students to manage acute care cases, simulation is frequently the educational tool. However, simulation content is often medically-focused, and post-simulation debriefs may not prioritize discussion of teamwork skills, as time is limited. Furthermore, debriefing both medical and teamwork aspects of a case may add to the learners cognitive load. This innovation uses an escape game as a non-clinical simulation to gamify teamwork skills training, with a focus on the collaborator CanMEDS role. In the entertainment industry, escape games are activities where teams solve a series of puzzles together to ultimately escape a room. **Methods:** 2 groups of 5 second-year medical students piloted the escape game, created within a simulation theatre, designed to surface teamwork competencies under the four University of Calgary Team Scheme domains (adapted from CIHCs National Interprofessional Competency Framework and Team-STEPPS): Leadership/Membership, Communication, Situation Monitoring, and Collaborative Decision-Making/Mutual Support. During the game, facilitators noted examples of students strengths and challenges in demonstrating teamwork competencies. Post-game, a debrief and written reflective exercise enabled students to analyze successes and challenges in demonstrating teamwork competencies, propose solutions to teamwork challenges, and write 3 goals to improve teamwork skills. All competencies listed under each Team Scheme domain represented themes used in a thematic analysis to uncover students reported teamwork challenges. **Results:** Each escape game is a 30-minute teamwork activity where 5 students collaborate to complete 8 puzzles, which do not require medical knowledge, in order to win. Briefing is scheduled for 15-minutes, whereas post-game debriefing and reflection is 45-minutes. **Conclusion:** Escape games can highlight strengths and challenges in teamwork and collaboration amongst second-year medical students. Every competency under the Team Scheme domains was highlighted by the escape game pilots, touching on both strengths and challenges, for which students demonstrated, debriefed, and reflected upon. Students self-documented teamwork challenges include issues surrounding task-focused, closed-loop communication, and frequent reassessments. Advantages of this innovation include its use as a learning progression towards acute care simulations, portability and affordability, potential interprofessional use, and customizability. Additional training time may be required to orient facilitators to this