

length of stay. We assessed for the occurrence of any SAE (death, arrhythmia, other cardiac and non-cardiac conditions) within 30 days of ED disposition. We used descriptive analysis, unpaired two-tailed t-test and chi-square test. Ethics approval was obtained at all study sites. **Results:** Of 1,475 ED patients with syncope during the study period, 992 (67.3%) arrived by EMS. Mean times (SD) for EMS arrival to the scene, patient assessment at the scene and transfer of patient from scene to the ED were 10.1 (6.4), 18.9 (8.3), and 14.6 (11.5) minutes respectively. Only two patients had critical interventions enroute (pacing and defibrillation). Overall 138 (13.9%) patients suffered a SAE; 32 (3.2%) detected by EMS, 58 (5.8%) detected during ED evaluation, 48 (4.8%) after ED disposition. The average ED length of stay was 5.9(4.2) hours. Based on average of cost from two sites, we estimated that total cost of transporting syncope patients from the scene to the ED to be \$4 million in Canada. The total cost of ED care for syncope patients transported by EMS in Canada was calculated at \$21.5 million. **Conclusion:** A substantial proportion of patients arriving to the ED via EMS suffer no SAE within 30 days. Correspondingly, our results suggest a need for an EMS clinical decision aid to divert low-risk syncope patients to alternative care pathways such as family physicians or rapid access clinics. If developed and implemented, this tool can potentially reduce EMS burden, ED crowding, and reduce healthcare costs.

**Keywords:** syncope, emergency medical services (EMS), health resource utilization

#### LO084

##### Text messaging research participants as a follow-up strategy to decrease emergency department study attrition

C. Vamer, MD, S.L. McLeod, MSc, N. Nahiddi, MD, B. Borgundvaag, PhD, MD; Schwartz-Reisman Emergency Medicine Institute, Toronto, ON

**Introduction:** Collecting patient-reported follow-up data for prospective studies in the emergency department (ED) is challenging in this acute care, minimal continuity setting. Follow-up is frequently attempted using telephone contact and in some instances mail correspondence. The objective of this study was to determine if text messaging study participants involved in an ongoing randomized trial resulted in a lower rate of attrition as compared to conventional telephone follow-up. **Methods:** This was a secondary analysis of research participants enrolled in a randomized controlled trial assessing head injury discharge instructions. Adult (18-64 years) patients presenting to an academic ED (annual census 65,000) with chief complaint 'head injury' occurring within 24 hours of ED visit were contacted by telephone 2 and 4 weeks post ED visit to complete a symptom questionnaire. During the first 4 months of study follow-up, participants were contacted by a conventional telephone call. Attrition was higher than anticipated, thus we received subsequent ethics approval for the final 3 months of follow-up duration to contact participants by text message on the day of the first telephone attempt as a reminder of the telephone interview scheduled later that day. The proportion of patients lost to follow-up at 2 and 4 weeks post ED visit was compared between participants not receiving and receiving reminder text messages. **Results:** 118 patients were enrolled in the study (78 underwent conventional follow-up and 40 received text messages). Mean (SD) age was 35.2 (13.7) years and 43 (36.4%) were male. During the period of conventional follow-up, 3 participants withdrew from the study. Of the remaining 75 participants, 24 (32.0%) at 2 weeks and 32 (42.7%) at 4 weeks were unable to be contacted. Of the 40 participants receiving a reminder text message, 4 (10.0%) at 2 weeks and 10 (25.0%) at 4 weeks were unable to be contacted. Overall, text messaging study participants decreased attrition by 22% (95% CI: 5.9%, 34.7%) and

17.7% (95% CI: -0.8%, 33.3%) at 2 and 4 week follow-up, respectively. **Conclusion:** In this young ED cohort participating in a randomized trial, text message reminders of upcoming telephone follow-up interviews decreased the rate of attrition. Text messaging is a viable, low-cost communication strategy that can improve follow-up participation in prospective research studies.

**Keywords:** methodology, communication, follow-up

#### LO085

##### Canadian in-hospital mortality for patients with emergency-sensitive conditions

S. Berthelot, MD, E. Lang, MD, H. Quan, MD, PhD, H. Stelfox, MD, PhD; Université Laval, Québec, QC

**Introduction:** The emergency department (ED) hospital standardized mortality ratio (ED-HSMR) measures risk-adjusted mortality for patients admitted to hospital with conditions for which ED care may improve outcomes (emergency-sensitive conditions). This study aimed to describe in-hospital mortality across Canadian provinces using the ED-HSMR. **Methods:** Data were extracted from hospital discharge databases from April 2009 to March 2012. The ED-HSMR was calculated as the ratio of observed deaths among patients with emergency-sensitive conditions in a hospital during a year (2010-11 or 2011-12) to the expected deaths for the same patients during the reference year (2009-10), multiplied by 100. The expected deaths were estimated using predictive models fitted from the reference year for different hospital peer-groups (teaching, large, medium and small hospitals) adjusted for comorbidities, age, diagnosis, and hospital length of stay. Thirty-seven validated emergency-sensitive conditions were included (e.g., stroke, sepsis, shock). Aggregated provincial ED-HSMR values were derived from patient-level probabilities of death. A HSMR above or below 100 respectively means that more or fewer deaths than expected occurred in hospital within a province. **Results:** During the study period, 1,335,379 patients were admitted to 629 hospitals across 11 provinces and territories with an emergency-sensitive condition as the most responsible diagnosis, of which 8.9% died. More in-hospital deaths (95% confidence interval) than expected were respectively observed for the years 2010-11 and 2011-12 in Newfoundland [124.3 (116.3-132.6) & 117.6 (110.1-125.5)] and Nova Scotia [116.4 (110.7-122.5) & 108.7 (103.0-114.5)], while mortality was as expected in Prince Edward Island and Manitoba, and less than expected in other provinces and territories [Territories 67.3 (48.3-91.3) & 73.2 (55.0-95.5); New Brunswick 87.7 (82.5-93.1) & 90.4 (85.2-95.8); British Columbia 92.0 (89.6-94.4) & 87.1 (84.9-89.3); Saskatchewan 92.3 (87.1-97.4) & 90.8 (86.2-95.6); Ontario 94.0 (92.6-95.4) & 88.0 (86.6-89.3); Alberta 94.1 (91.1-97.2) & 91.0 (88.2-93.9); Québec 95.7 (93.8-97.6) & N/A]. **Conclusion:** Our study revealed important variation in risk-adjusted mortality for patients admitted to hospital with emergency-sensitive conditions among Canadian provinces. The results should trigger more in-depth evaluations to identify the causes for these regional variations.

**Keywords:** all-cause mortality, performance, quality indicators

#### LO086

##### The utility of an inpatient diagnosis-derived Charlson Comorbidity Index to create an emergency department workload model

E. Grafstein, MD, G. Innes, MD, F.X. Scheuermeyer, MD, D. Sharma, BS, A. Siddoo, BS, W. Tan, BS, R. Stenstrom, MD, PhD; Vancouver Coastal Health, Vancouver, BC

**Introduction:** A previous Canadian emergency department (ED) model determined predictors of increased workload using a manual chart review