Factors predicting morbidity and mortality associated with pre-hospital “lift assist” calls
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Introduction
• When an individual requires assistance with mobilization, emergency medical services (EMS) may be called
• A "lift assist" (LA) call is recorded when a patient is assisted up but does not receive treatment on scene and is not transported to hospital for medical evaluation
• We have previously shown that LA are associated with 14-day morbidity and mortality
• However, what places patients at an increased risk for morbidity and mortality is not yet known

Objective
• To determine factors that are associated with increased risk of 14-day morbidity in LA calls

Methods
• A retrospective chart review was performed for all LA calls from a single EMS agency over a one-year study period (Jan – Dec 2013)
• Calls were linked with hospital records to determine if LA patients had subsequent visits to the emergency department (ED), hospital admission, or death within 14 days of the LA call
• Logistic regression analyses were run to predict the examined morbidity and mortality from the patient’s age, gender, co-morbidities and vital signs at the initial LA call

Results
• Between January and December 2013 there were 42,055 EMS calls; 808 (1.9%) were LA calls
• Patient age > 61 years (p<0.001) and history of cardiac disease (p = 0.006) significantly predicted ED visit in 82% of cases (Figure 1)
• Patient age >61 years (p = 0.001) and an Ambulance Call Record (ACR) missing at least 1 vital sign (p = 0.017) significantly predicted hospital admission in 88.8% of cases (Figure 2)
• There was a 10% increase in risk of ED visit and hospital admission for every 10-year increase of age after the age of 41
• Of the 96 patients with at least 1 missing vital sign from the ACR, 14 (14.5%) were coded as patient refusals
• The sample size was too small to determine predictors for mortality

Conclusions
• LA calls are associated with short-term morbidity, mortality and considerable use of EMS resources
• Patients at risk for morbidity are older than 61 years of age and have co-existing cardiac disease
• Patients who are greater than 61 years of age and had at least one missing vital sign on the ACR were more at risk for hospital admission
• Greater effort should be made to obtain all vitals in order to fully assess a patient’s condition on a LA call
• In order to determine morbidity, a larger patient population will be required