

**Objective:** We conducted this study to evaluate the patterns and frequency of use of drug-facilitated intubation (DFI) by pre-hospital personnel following its introduction and availability.

**Methods:** This was a retrospective study of reported pre-hospital data on number of patients in which drug-facilitated intubations were performed between January 1, 2003 and July 31, 2006. For inclusion into the DFI data, the patient had to receive succinylcholine before an attempt at intubation by pre-hospital personnel and meet the indications set forth by standing orders for DFI, specifically presence of incomplete relaxation or high likelihood of losing an airway during transport. Patients in cardiac arrest were excluded from this study. The number of patients receiving DFI was compared to the total number of patients who were not in cardiac arrest that were intubated. The percentage of total non-arrest intubations that were drug facilitated was then calculated for each year between 2003 and 2006 with data through July 2006. Statistical analysis was performed using the Chi-square test. Trend analysis was performed using ANOVA and the Tukey test.

**Results:** The percentage of drug-facilitated intubations compared to total non-arrest intubations was 57.8%, 45.0%, 34.1%, and 71.1% for 2003, 2004, 2005, and the first 7 months of 2006 respectively. The percentage of DFI in 2003 (57.8%) compared to the percentage in 2004-2005 (38.8%) was statistically significant ( $p < 0.001$ ). The percentage of DFI in the first 7 months of 2006 (71.1%) compared to the percentage in 2004-2005 (38.8%) was also statistically significant ( $p < 0.0001$ ). ANOVA showed a significant quadratic trend in the use of DFI over time.

**Conclusions:** These data support the hypothesis that there was an initial peak in usage of DFI after the availability to pre-hospital personnel in 2003, and that after a decline the rates were increasing as users became more familiar and comfortable with its use.

## 8 Pre-Hospital Time Measures for Acute Stroke Patients

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**Introduction:** Poor rates of thrombolysis for acute stroke partially result from lack of recognition and delayed hospital arrival by patients. Even though EMS transports reduce time to hospital arrival, acute strokes missed by both emergency medical dispatchers (EMD) and paramedics may result in prolonged transport times.

**Objectives:** We sought to determine pre-hospital time delays for acute strokes in a large urban EMS system.

**Methods:** Retrospective study of patients >18 years identified

as having acute stroke by EMD, city paramedics or stroke neurologists transported to hospitals by EMS personnel from 1/1/2005 to 12/31/2005. Data were acquired from a computer-assisted dispatch, a computerized paramedic, stroke team databases and ICD-9 codes. The final diagnosis of stroke/not stroke was identified from stroke team diagnosis or ICD-9 codes. Paramedic time to scene (TS), scene time (ST) and total run time (RT) were compared between missed and true strokes. Time intervals were calculated when EMS personnel had diagnostic agreement/disagreement using a Mann-Whitney U test for nonparametric data; medians and Inter Quartile Ranges are reported.

**Results:** A total of 1067 patients were eligible for the study, of which 22 were excluded for missing data. The stroke team identified 440 (41%) of which EMD missed 73 (16.6%) and paramedics missed 247 (56.1%). For true strokes, EMS personnel were in agreement 27.3% of the time. ST and RT were significantly different when EMS personnel were in agreement on stroke (ST=19 min.; IQR=16,24 and RT=39 min.; IQR=33,45 ) compared to not in agreement (ST=18 min.; IQR=14,22 and RT=36.5 min.; IQR=30,43  $p < 0.001$ ). Time measures did not differ between true and missed strokes ( $p > 0.05$ ).

**Conclusions:** Pre-hospital scene time and run times for acute strokes are less when there is diagnostic concordance between dispatchers and paramedics. Future efforts should focus on improving the stroke recognition by all levels of pre-hospital providers.

## 9 Utilization of Computed Tomography Angiography in the Evaluation of Acute Pulmonary Embolus

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**Objectives:** To assess the appropriate use of computed tomography angiography (CTA) in the diagnostic evaluation of acute pulmonary embolism (PE).

**Methods:** Review of 580 inpatient (45%), emergency department (ED) (41%) and outpatient (14%) CTAs to evaluate for acute PE performed at a large teaching hospital from January 2004 through March 2005. Based on chart review blinded to final diagnoses, PE pretest probability using Wells criteria was retrospectively assigned. D-dimer values (if obtained) were also reviewed.

**Results:** Of the 580 patients scanned, only three were high probability; two of these had PE (67%). Of the remaining 577, 48% were intermediate and 51% were low probability. The overall positivity rate for PE was 10%; inpatient 12%, ED 8%, and outpatient 1%. Of the high, intermediate and low probability groups, 67%, 14% and 5% had PE, respectively.