

7 days for the IV and non-IV groups. **Results:** Our analysis included 31 802 patient visits treated by 185 physicians. The average patient age was 37.8 years with 64.3% being female and the majority triaged as CTAS 3 (82.5%). On average 24% of these visits were treated with IV therapies; 90th percentile; 34%. For physicians seeing in excess of 100 cases, the variation in IV therapy use ranged from 1% to 47%. Patients receiving IV therapies demonstrated a 44% greater average LOS (6.2 hours vs 4.3 hours) and those receiving IV therapies had higher 7-day ED revisit rates (12.0% vs 8.8%) as well as 7-day ED revisits resulting in readmission (2.4% vs 1.0%). 'mso-spacerun:yes' > Secondary outcomes were a comparison of ED LOS, ED revisits at 7 days and ED revisits resulting in admission at 7 days for the IV and non-IV groups. **Conclusion:** This is the first study to examine physician preference for the use of IV therapies in a low-acuity population and has demonstrated in excess of a 47-fold variation between both extremes of use. Reducing practice variation in this area of ED care by standardizing indications for IV therapies could result in more rational resource utilization and improved throughput.

Keywords: resource utilization, low-acuity visits, IV therapies

MP026

Implementation of an ED atrial fibrillation and flutter pathway improves rates of appropriate anticoagulation in patients not previously on these medications

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Introduction: Atrial fibrillation and flutter (AFF) are the most common arrhythmias presenting to the emergency department. Without anticoagulation, AFF increases stroke risk; individuals with paroxysmal AFF have a similar prognosis. A coordinated ED AFF electronic order-set and management pathway was developed at our institution. The primary objective of this study was to measure rates of appropriate anticoagulation (AAC) on discharge from the ED for patients presenting with AFF not previously on antithrombotic or anticoagulant medications. Secondary objectives included comparison of the following outcomes pre and post-pathway (PRE & POST): AFF Clinic referral rates, ED return rates, and mortality. **Methods:** This was a retrospective case series of patients presenting to our quaternary care ED with AFF pre and post AFF pathway implementation. Cases were identified using an administrative database covering 120 000 annual ED visits. Trained research assistants and the primary investigator extracted data from the electronic medical record. 20% of all charts were double collected to ensure accuracy ($k = 0.85$). Descriptive variables were described using counts, means, medians and confidence intervals. Chi-square statistics of dependent samples were calculated for the primary outcome. **Results:** We examined 307 cases of AFF presenting to our ED ($n = 130$ PRE; $n = 177$ POST). Demographic variables were similar PRE and POST: mean age (66.0 [95%CI 63.8-68.3] PRE; 65.0 [63.0-67.0] POST), % male (59.2% PRE; 59.3% POST), presenting rhythm (66.2% A.fib [58.0-74.3] A. flutter 29.2% [21.4-37.0] PRE; 61.0% A.fib [53.8-68.1] A. flutter 17.5% [11.9-23.1] POST), and CHADS₂VASC score (2.1 [1.8-2.4] PRE; 1.9 [1.7-2.1] POST). The rate of AAC rose from 39.1% PRE to 77.8% POST ($P < 0.01$). AFF clinic referral rates increased from 16.9% PRE to 25.4% POST (not significant). ED return rates within 30 days for AFF, CHF, major bleeding and CVA were unchanged. 30 day mortality rates were not statistically different (1.5% PRE vs. 2.8% POST). **Conclusion:** The implementation of a

coordinated ED AFF pathway was associated with significant improvements in the proportion of patients discharged with appropriate anticoagulation who had not previously been on antithrombotic or anticoagulant

medications. ED return rates and mortality did not change significantly. **Keywords:** atrial fibrillation, anticoagulation, emergency medicine

MP027

Automated cardiopulmonary resuscitation quality data abstraction for complete episodes of out-of-hospital cardiac arrest resuscitation

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Introduction: Cardiopulmonary resuscitation (CPR) quality assurance and research has traditionally been limited to the first five minutes of resuscitation due to significant costs in time, resources and personnel from manual data abstraction. Moreover, CPR quality can be affected during prolonged resuscitations, which represents significant knowledge gaps. The objective of this study was to develop a software program to help automate the abstraction of CPR quality data from electronic defibrillators. **Methods:** We developed a software program to facilitate and help automate data abstraction from electronic defibrillator files for entire resuscitation episodes. Internal validation of the software program was performed on 50 randomly selected cardiac arrest cases with resuscitation durations of up to 60 minutes. CPR quality data variables such as number of ventilations, number of compressions, minute compression rate, minute compression depth, minute compression fraction, minute end-tidal CO₂, were manually abstracted independently by two trained data abstractors and by the automated software program. Error rates and the time needed for data abstraction were measured.

Results: A total of 9826 data points were abstracted. Manual data abstraction resulted in a total of six errors (0.06%) compared to zero errors by the software program. The mean time \pm SD needed for manual data abstraction was 20.3 ± 2.7 minutes compared to 5.3 ± 1.4 minutes using the software program ($p = 0.003$). **Conclusion:** Our CPR quality data abstraction software was 100% accurate in abstracting CPR quality data for complete resuscitation episodes and showed a significant reduction in data abstraction duration. This software will enable quality assurance programs and future cardiac arrest studies to evaluate the impact of CPR quality during prolonged resuscitations.

Keywords: cardiopulmonary resuscitation (CPR), quality, emergency medical services (EMS)

MP028

Dynamic changes of prehospital serial 12-lead electrocardiogram for remote diagnosis of suspected ST-segment elevation myocardial infarction

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Introduction: Accurate and efficient interpretation of prehospital 12-lead electrocardiogram (ECG) in patients with suspected ST-segment elevation myocardial infarction (STEMI) can improve outcomes, especially in rural regions. In the Chaudière-Appalaches region, Quebec, a prehospital serial 12-lead ECG monitoring system is used for remote interpretation of ECG abnormalities by emergency physicians via a telemedicine platform, the Unité de Coordination Clinique des Soins Préhospitaliers d'Urgence (UCCSPU). The objective of the study was to evaluate the use of serial monitoring of dynamic ECG changes in patients with suspected STEMI during emergency medical services