

P009**Emergency department overcrowding associated with increased door-to-ecg time in patients with chest pain**

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Introduction: Emergency Department (ED) overcrowding has been shown to delay time sensitive tests and therapies. North American guidelines call for Door-to ECG (DTE) times to be <10min in patients presenting with chest pain as delays have been shown to lead to poorer patient outcomes. We hypothesize that increased ED crowding will increase the DTE times. **Methods:** This was a retrospective cohort study from July 2015-May 2016 at a single tertiary care Canadian ED (53000 visits per year). Data were extracted from the ED information system (EDIS) which contains an organized record of ED activity for each visit. Our selection criteria screened for patients presenting with complaints that included chest pain, chest heaviness, chest tightness and chest burning. The primary outcome of the study was the association between ED occupancy and DTE time, which was measured using a non-parametric Spearman correlation. Multivariable linear regression models controlling for age and sex were developed for both time in minutes, and the log transformed time in minutes. **Results:** There were 2479 ECGs done on patients presenting with chest pain that met inclusion criteria. The median DTE time was 55.1 minutes. There was a significant positive association between DTE time and ED occupancy ($\rho = .133$, $p < 0.001$). DTE time increased by 0.64 minutes (or approximately 0.4%) for each additional patient in the ED, $p < 0.001$. Additionally, younger age and female sex were also associated with increased DTE time. **Conclusion:** Increased ED occupancy was correlated with longer DTE times at a single Canadian ED, even after controlling for age and sex. This study provides an example of the negative consequences of ED overcrowding.

Keywords: overcrowding

P010**A systematic review of the association between emergency medical services (EMS) time factors and survival**

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Introduction: EMS time factors such as total prehospital, activation, response, scene and transport intervals have been used as a measure of EMS system quality with the assumption that shorter EMS time factors save lives. The objective was to assess in adults and children accessing ground EMS (population), whether operational time factors (intervention and control) were associated with survival at hospital discharge (outcome). **Methods:** Medline, EMBASE, and CINAHL were searched up to January 2015 for articles reporting original data that associated EMS operational time factors and survival. Conference abstracts and non-English language articles were excluded. Two investigators independently assessed the candidate titles, abstracts, and full text with discrepant reviews resolved by consensus. Risk of bias was assessed using GRADE. **Results:** A total of 10,151 abstracts were screened for potential inclusion, 199 articles were reviewed in full-text, and 73 met inclusion criteria. Amongst included studies, 49 investigated response time, while 24 investigated other time factors. All articles were observational studies. Amongst the 14 (28.6%) studies where response time was the primary analysis, statistically significant associations between

shorter response time and increased survival were found in 5 of 7 cardiac arrest, 1 of 5 general EMS population, and 0 of 2 trauma studies. Other time factors were reported in the primary analysis in 10 (41.7%) studies. One study reported shorter combined scene and transport intervals associated with increased survival in acute heart failure patients. Two studies in trauma patients had somewhat conflicting results with one study reporting shorter prehospital interval associated with increased survival whereas the other reported increased survival associated with longer scene and transport intervals. Study design, analysis, and methodological quality were of considerable variability, and thus, meta-analyses were not possible. **Conclusion:** There is a substantial body of literature describing the association between EMS time factors and survival, but evidence informing these relationships are heterogeneous and complex. Important details such as patient population, EMS system characteristics, and analytical approach must be taken into consideration to appropriately translate these findings to practice. These results will be important for EMS leaders wishing to create evidence-based time policies.

Keywords: prehospital, response time, time factors

P011**Performance of emergency department nurses in evaluating a simulated patient with alcohol withdrawal syndrome following an education curriculum**

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Introduction: The optimal management of emergency department (ED) patients with alcohol withdrawal syndrome (AWS) includes a symptom driven approach with scheduled reassessments using a standardized scoring system (Clinical Institute Withdrawal Assessment for Alcohol-Revised; CIWA-Ar) and treatments according to symptom severity. The subjective nature of the CIWA-Ar, and lack of standardized competency-based education related to alcohol withdrawal results in widely variable treatment. The objective of this study was to perform a summative evaluation of clinical staff during the objective structured clinical examination (OSCE) of a simulated patient (SP) with AWS. **Methods:** The AWS education curriculum was completed by all staff nurses in our ED (mandatory for full-time, optional to part-time staff). It was based on a real clinical scenario depicting moderate alcohol withdrawal and portrayed by a single SP. Prior to the OSCE, participants attended a seminar orienting them to the simulation. Each participant was asked to do a complete assessment of the SP, and graded for completeness on 37 individual components of history/physical exam, including the 10 domains of the CIWA-Ar. **Results:** 74 participants completed the educational curriculum over 8 weeks. At least 9/10 domains of the CIWA-Ar assessment were completed by 65 (88%) of participants, and 28 (38%) correctly assessed at least 80% of all summative evaluation components. 63 (85%) participants correctly identified the need for treatment of withdrawal symptoms. Only 13 (18%) participant assessments exactly matched our exact target CIWA-Ar score of 15, however 61% were within 2 points on the CIWA-Ar scale. In only 4 (5%) instances would a participant have inappropriately rated AWS severity below the treatment threshold. 62/72 (86%) participants rated the SP tremor as 2-4 (intended tremor = 3). Clinical features most often overlooked were history of other addictions (25 participants, 33%) and history of liver disease (15 participants, 20%). **Conclusion:** The majority of participants in this OSCE correctly assessed the important elements in the assessment of AWS, and diagnosed the SP as having moderate alcohol withdrawal. Thus our educational intervention