

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

resulted in 85% of participants properly identifying the severity of AWS, and developing an appropriate treatment strategy. The impact of this curriculum on actual patient treatment requires further evaluation.

Keywords: alcohol withdrawal syndrome, clinical institute withdrawal assessment for alcohol scale, education

P012

Why did you leave? Contacting Left Without Being Seen (LWBS) patients to understand their emergency department experience

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Introduction: As experienced in Emergency Departments (EDs) across Canada, Saskatoon EDs have a percentage of patients that leave before being assessed by a physician. This Left Without Being Seen (LWBS) group is well documented and we follow the numbers closely as a marker of quality, what happens after they leave is not well documented. In Saskatoon EDs, if a CTAS 3 patient that has not been assessed by a physician decides to leave the physician working in the ED is notified. The ED physician will: try to talk to the patient and convince them to stay, can assess the patient immediately if required, or discuss other appropriate care options for the patient. In spite of this plan patients with a CTAS score of 3 or higher (more acute) still leave Saskatoon EDs without ever being seen by a physician. Our desire was to follow up with the LWBS patients and try to understand why they left the ED. **Methods:** Daily records from one of the three EDs in Saskatoon documenting patients with a CTAS of 3 or more acute who left before being seen by a physician were reviewed over an eight-month period. A nurse used a standardized questionnaire to call patients within a few days of their ED visit to ask why they left. If the patients declined to take part in the quality initiative the interaction ended, but if they agreed a series of questions was asked. These included: how long they waited, reasons why they left, if they went somewhere else for care and suggestions for improvement. Descriptive statistics were obtained and analyzed to answer the above questions. **Results:** We identified 322 LWBS patients in an eight-month time period as CTAS 3 or more acute. We were able to contact 41.6% of patients. The average wait time was 2 hours and 18 minutes. The shortest wait time was 11 minutes, whereas the longest wait time was 8 hours and 39 minutes. It was found that 49.1% of patients went to another health care option (Medi-Clinic or another ED in Saskatoon) within 24hrs of leaving the ED. Long wait times were cited as the number one reason for leaving. Lack of better communication from triage staff regarding wait time expectations was cited as the top response for perceived roadblocks to care. Reducing wait times was cited as the number one improvement needed to increase the likelihood of staying. **Conclusion:** The Saskatoon ED LWBS patient population reports long wait times as the main reason for leaving. In order to improve the LWBS rates, improving communication and expectations regarding perceived wait times is necessary. The patient perception of the ED experience is largely intertwined with wait times, their initial interaction with triage staff, and how easily they navigate our very busy departments. Therefore, it is vital that we integrate the patient voice in future initiatives geared towards improving health care processes.

Keywords: quality improvement and patient safety, left without being seen, emergency department

P013

Management of intimate partner violence in the emergency department

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Introduction: Intimate partner violence (IPV) is a serious public health concern with complex medico-legal implications and a wide range of morbidity. While the ED is often the primary access point for these patients, IPV is under-recognized. Our objectives were to describe the characteristics of female IPV patients in the ED and determine the assessment and management patterns of physicians at a tertiary care academic ED. **Methods:** We conducted a health records review of adult (>18years) female patients seen at a tertiary care hospital ED presenting with evidence of IPV from January to September 2016. A combined search strategy of hospital records and Sexual Assault and Partner Abuse Care Program (SAPACP) patient rosters was used to identify study subjects. Data were collected for patient demographic/presenting characteristics, assault characteristics, and patterns of referral, management and patient disposition/discharge. Descriptive statistics were generated. **Results:** 100 patients met inclusion criteria with; mean age 35.1, female 100.0%, arrival by ambulance 53.0%, and mean CTAS level of 2.4. Abuse screening was completed at triage only 24.0% of the time. Presenting complaints were varied, with the most common being injury or trauma (32.0%). Most patients were only identified from the SAPACP roster. Patients reported strangulation, a strong predictor of future homicide, in 34.0% of cases. Admission to hospital occurred in 7.0% of cases with 19.0% involving specialist consultation and 7.0% leaving against medical advice or without being seen. Legal interactions including police involvement occurred 72.0% of the time and Childrens Aid Society was involved in 26.0% of cases. The final diagnosis was recorded as IPV or equivalent in only 49.0% of cases; the remainder were discharged with a final diagnosis of injury/trauma (26.0%), sexual assault (6.0%), somatic complaint (6.0%), mental health (8.0%), substance use/abuse (3.0%) or other (2.0%). **Conclusion:** Our study highlights that IPV is a common and heterogeneous entity with a wide spectrum of presentations and morbidity. Strangulation rates were high and are associated with increased risk of homicide. IPV is currently under-recognized and continues to carry stigma as ER physicians only recorded a discharge diagnosis of IPV or equivalent in half of cases. Educational strategies are required to highlight the importance of IPV to ED staff.

Keywords: intimate partner violence, domestic violence

P014

Comparison of prehospital administration of naloxone to patients with or without a history of an opioid overdose

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Introduction: Paramedics frequently make immediate life-altering decisions with minimal clinical information. This applies to their decision to treat an unconscious patient with naloxone when the history of an opioid overdose cannot be readily established. Among patients treated by paramedics with naloxone, our objective was to compare patient demographics, treatment interventions and clinical response between patients with and without a confirmed history of an opioid overdose. **Methods:** This was a retrospective cohort study design of consecutive patients treated with naloxone by paramedics between January 1, 2016, and June 30, 2017. Patients were classified based on whether paramedics did or did not document a history of an opioid overdose. Baseline characteristics, treatment interventions, and response to naloxone were compared between groups. Comparisons were done using a chi-squared or Fishers exact test. **Results:** We identified 294 patients of whom 113 (38%) did not have a confirmed history of an opioid overdose. The groups were similar in gender, bystander CPR, and bystander administration. There were no differences in the presence