

67%. Almost all ED's increased their THN kit distribution from year to year, though there was one urban community site that dispensed fewer kits in the second year of the program. **Conclusion:** Edmonton Zone ED's dispensed 686 THN kits over two calendar years. Almost every ED distributed more kits in 2017 than 2016, which likely reflects successful uptake of this harm reduction intervention by frontline ED staff. However, there is still evidence of some imbalance in THN kit allocation as the percent increase in kits distributed varied widely based on the type of ED. This data can be used to pinpoint areas in the Edmonton Zone where barriers to THN access may still exist and guide continued quality improvement interventions to increase distribution and education.

Keywords: take home naloxone, opioid, overdose

P082

Predictive ability of the quick Sepsis-related Organ Failure Assessment score among patients with infection transported by paramedics: a Bayesian analysis

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Introduction: The quick Sepsis-related Organ Failure Assessment (qSOFA) score was developed to provide clinicians with a quick assessment for patients with latent organ failure possibly consistent with sepsis at high-risk for mortality. With the clinical heterogeneity of patients presenting with sepsis, a Bayesian validation approach may provide a better understanding of its clinical utility. This study used a Bayesian analysis to assess the prediction of hospital mortality by the qSOFA score among patients with infection transported by paramedics. **Methods:** A one-year cohort of adult patients transported by paramedics in a large, provincial EMS system was linked to Emergency Department (ED) and hospital administrative databases, then restricted to those patients with an ED diagnosed infection. A Bayesian binomial regression model was constructed using Hamiltonian Markov-Chain Monte-Carlo sampling, normal priors for each parameter, the calculated score, age and sex as the predictors, and hospital mortality as the outcome. Discrimination was assessed using posterior predictions to calculate a "Bayesian" C statistic, and calibration was assessed with calibration plots of the observed and predicted probability distributions. The independent predictive ability of each measure was tested by including each component measure (respiratory rate, Glasgow Coma Scale, and systolic blood pressure) as continuous predictors in a second model. **Results:** A total of 9,920 patients with ED diagnosed infection were included. 264 (2.7%) patients were admitted directly to the ICU, and 955 (9.6%) patients died in-hospital. As independent predictors, the probability of mortality increased as each measure became more extreme, with the Glasgow Coma Scale predicting the greatest change in mortality risk from a high to low score; however, no dramatic change in the probability supporting a single decision threshold was seen for any measure. For the calculated score, the C statistic for predicting mortality was 0.728. The calibration curve had no overlap of predictions, with a probability of 0.5 (50% credible interval 0.47-0.53) for patients with a qSOFA score of 3. **Conclusion:** Although no single decision threshold was identified for each component measure, a calculated qSOFA score provides good prediction of mortality for patients with ED diagnosed infection. When validating clinical prediction scores, a Bayesian approach may be used to assess probabilities of interest for clinicians to support better clinical decision making. Character count 2494

Keywords: Bayesian analysis, prediction, sepsis

P083

Innovative use of AED by RNs and RTs during in-hospital cardiac arrest (Phase III)

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Introduction: In-hospital cardiac arrest (IHCA) most commonly occurs in non-monitored areas, where we observed a 10min delay before defibrillation (Phase I). Nurses (RN) and respiratory therapists (RTs) cannot legally use Automated External Defibrillators (AEDs) during IHCA without a medical directive. We sought to evaluate IHCA outcomes following usual implementation (Phase II) vs. a Theory-Based educational program (Phase III) allowing RNs and RTs to use AEDs during IHCA. **Methods:** We completed a pragmatic before-after study of consecutive IHCA. We used ICD-10 codes to identify potentially eligible cases and included IHCA cases for which resuscitation was attempted. We obtained consensus on all data definitions before initiation of standardized-piloted data extraction by trained investigators. Phase I (Jan.2012-Aug.2013) consisted of baseline data. We implemented the AED medical directive in Phase II (Sept.2013-Aug.2016) using usual implementation strategies. In Phase III (Sept.2016-Dec.2017) we added an educational video informed by key constructs from a Theory of Planned Behavior survey. We report univariate comparisons of Utstein IHCA outcomes using 95% confidence intervals (CI). **Results:** There were 753 IHCA for which resuscitation was attempted with the following similar characteristics (Phase I n = 195; II n = 372; III n = 186): median age 68, 60.0% male, 79.3% witnessed, 29.7% non-monitored medical ward, 23.9% cardiac cause, 47.9% initial rhythm of pulseless electrical activity and 27.2% ventricular fibrillation/tachycardia (VF/VT). Comparing Phases I, II and III: an AED was used 0 times (0.0%), 21 times (5.6%), 15 times (8.1%); time to 1st rhythm analysis was 6min, 3min, 1min; and time to 1st shock was 10min, 10min and 7min. Comparing Phases I and III: time to 1st shock decreased by 3min (95%CI -7; 1), sustained ROSC increased from 29.7% to 33.3% (AD3.6%; 95%CI -10.8; 17.8), and survival to discharge increased from 24.6% to 25.8% (AD1.2%; 95%CI -7.5; 9.9). In the VF/VT subgroup, time to first shock decreased from 9 to 3 min (AD-6min; 95%CI -12; 0) and survival increased from 23.1% to 38.7% (AD15.6%; 95%CI -4.3; 35.4). **Conclusion:** The implementation of a medical directive allowing for AED use by RNs and RRTs successfully improved key outcomes for IHCA victims, particularly following the Theory-Based education video. The expansion of this project to other hospitals and health care professionals could significantly impact survival for VF/VT patients.

Keywords: automated external defibrillator, cardiac arrest

P084

The sky is not the limit! Protocol for a rapid systematic review on the use of drones in emergency medicine

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Introduction: Drones are already being used in medicine. They are employed to transport blood products and laboratory samples in rural and remote areas and they are increasingly being tested to deliver external defibrillators outside the hospital to patients with cardiac