

involved in the care of a patient that has been readmitted. This alert is sent within hours of a readmission occurring and contains meaningful visit detail (discharge diagnosis, readmit diagnosis, patient name, etc) to help support practice reflection. An average of 15 alerts per day are generated and have been sent since implementation in April 2017. Although an old technology, the use of email is a central component of the solution because it allows physicians to receive notifications at home and outside the hospital network where they routinely perform administrative tasks. A secondary notification is sent to personal email accounts (Gmail, Hotmail, etc) to indicate an unplanned admission has occurred, but without visit detail or identifiable information. It also allowed implementation with no new hardware or software cost. **Results:** A simple thumbs up/down rating system is used to adjust the sensitivity of the alert over time. More than 66% of those providing feedback have indicated the alert is helpful for practice reflection (i.e., thumbs up). And of those that indicated it was not helpful, comments were often entered indicating satisfaction with the alert generally, or suggestions for improvement. For example, consulted admitting physicians are often responsible for discharge decisions and should be added as recipients of the alert. **Conclusion:** Many physicians have indicated appreciation in knowing about return patients, and that they will reflect on their care, further review the chart, or contact the admitting physician for further discussion. Most are accepting of some 'expected' or 'false positive' alerts that aren't helpful for practice reflection. Further tuning and expansion of the alert to specialist and consult services is needed to ensure all physicians involved in a discharge decision are adequately notified.

Keywords: quality improvement and patient safety, readmission, analytics

P097

Making emergency room crash carts useful

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Introduction: Human factors are a neglected when it comes to crash cart design and function. Using observational assessments and in-house surveys, the process improvement team found that staff use of the crash carts in the University of Alberta ED had significant redundancy, inefficiency and often leading to confusion during use. The process improvement team assessed the layout of the adult crash cart and redesigned the cart format based on observational problems/inefficiencies staff had during resuscitations. It was hoped that staff found the new design more efficient and effective during resuscitations when compared to the old cart. **Methods:** To effect change, the Rapid result change theory method was utilized to implement the new crash cart prototype. The model was used to evoke excitement and staff participation in front line process improvement. With input from senior staff, the cart was redesigned and placed in resus area where it stood the greatest chance of being used frequently. Once a prototype crash cart had gone live, surveys, based on a 7 point Likert scale compared the old and new cart systems. The resus area housed both old and new carts to facilitate the comparison. The survey assessed 6 domains; visibility of the medications, locating medications, overall organization, time savings, mixing medications and comfort level of using each cart. **Results:** After the trial, the surveys were collected and analyzed using T-test; the results were significant. There was an overwhelming positive result within all domains when comparing the two carts. There was mean difference ranging from 1.7 to 3.5 comparing when comparing the two carts to each domain. **Conclusion:** The results were so positive; all seven carts were changed to the same format. The overall impact of the new cart design saved time in both application and turnaround time in restocking. **Keywords:** crash cart, resuscitation, redesign

P098

Solid organ donation from the emergency department - a systematic review

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Introduction: There is a significant gap between the number of organ donors and people awaiting an organ transplant; therefore it is essential that all potential donors are identified. Given the nature of Emergency Medicine it is a potential source of organ donors. The purpose of this study is to determine what percent of successful donors come from the Emergency Department (ED) and whether there are any missed potential donors. **Methods:** Electronic searches of EMBASE, MEDLINE, and CINAHL were performed July 7, 2017 using PRISMA guidelines. Primary literature in human adults were included if they described identification of patients in the ED who went on to become successful solid organ donors, or described missed potential donors in the ED. Data on the total population of actual or missed donors was required to allow calculation of a percentage. Studies describing non-solid organ donation, consent, ethics, survey of attitudes, teaching curricula, procurement techniques, donation outside the ED, and recipient factors were excluded. 2 authors independently screened articles for inclusion and discrepancies were resolved through consensus. Quality was assessed using STROBE for observational studies. Heterogeneity of patient populations precluded pooling of the data to conduct a meta-analysis. **Results:** 1058 articles were identified, 17 duplicates were removed, 800 articles were excluded based on title and abstract, and 217 full text articles were excluded, yielding 24 articles for the systematic review. For neurologic determination of death (NDD), ED patients comprised 44% of successful donors. ED death reviews revealed 84% of patients dying in the ED are missed as potential donors and hospital-wide death reviews revealed 80.9% of missed donors die in the ED. For donation after cardiac death (DCD), 20% of successful donors came from the ED and studies investigating potential donors suggest 36% of patients dying in the ED could be potential DCD donors. The most common population of successful DCD organ donors was in traumatic cardiopulmonary arrest (TCPA), with 8.9% of TCPA patients presenting to the ED becoming successful donors. **Conclusion:** Patients dying in the Emergency Department are a significant source of both successful organ donors and missed potential donors. Emergency physicians should be familiar with their local organ donation protocol to ensure potential organ donors are not missed.

Keywords: organ donation, systematic review

P099

Evaluating the potential impact of an ECPR program at The Ottawa Hospital: a retrospective health records review

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Introduction: Extracorporeal Life Support in the context of cardiac arrest (ECPR) is an emerging resuscitative therapy which has shown promising results for patients who may not otherwise survive. As a resource-intensive intervention, ECPR requires carefully selected patients to maximize its potential benefits and mitigate undue harm. This retrospective health records review sought to identify the characteristics of cardiac arrest patients presenting to two academic tertiary care Emergency Departments (EDs) in order to assess the feasibility and impact of an ECPR program. **Methods:** We reviewed charts for all patients aged 18-75 years old presenting to two Academic Teaching

Hospitals with out-of-hospital or in-ED refractory cardiac arrest from January 2015 to December 2016. Based on a review of existing ECPR literature, we defined two sets of liberal and restrictive criteria associated with survival and applied these to our cohort for possible initiation of ECPR. The chart review was completed by one of the principal investigators, with 10% of charts randomly reviewed by a second investigator to ensure good inter-agreement. Any discrepancies or ambiguities found in the review were resolved collaboratively between both investigators. **Results:** A total of 220 charts were identified and 191 deemed eligible for inclusion in the study. The median age was 59 (IQR: 49.5-67) years and the cohort was 72% male. The initial presenting rhythm was identified as VT/VF in 47% of patients. 65% of arrests were witnessed, with immediate bystander CPR performed on 50% patients and an additional 12% receiving CPR within 10 minutes of collapse. 60% of patients had cardiac arrest lasting less than 75 minutes. 69% of patients were identified as having a reversible cause of cardiac arrest. A favorable premorbid status was identified in 76% of patients. Application of our two sets of ECPR inclusion criteria revealed that 17% and 3% of patients for the liberal and restrictive criteria respectively, would have been candidates for ECPR. **Conclusion:** At our centre, we identified that in a two-year period, 3% to 17% of cardiac arrest patients presenting to the ED would have met inclusion criteria for ECPR, translating to an additional 0.2-1.4 patients per month admitted for critical care. These findings would suggest that the implementation of an ECPR program at our institution has the potential to have a positive impact for patients with only a relatively low volume of patients requiring additional resources.

Keywords: extracorporeal life support, cardiac arrest, resuscitation

P100

Exploring First Nations members emergency department experiences and concerns through participatory research methods

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Introduction: Emergency Departments (EDs) are frequently the first point of entry to access health services for First Nation (FN) members. In Alberta, FN members visit EDs at almost double the rate of non-FN persons. Furthermore, preliminary evidence demonstrates differences in ED experience for FN members as compared to the general population. The Alberta First Nations Information Governance Centre, Maskwacis Health Services, Yellowhead Tribal Council, Treaty 8 First Nations of Alberta, and Alberta Health Services are working together to research FN members ED experiences and concerns. **Methods:** This is participatory research guided by a two-eyed seeing approach that acknowledges the equal value of both Western and Indigenous worldviews. FN and non-FN leaders researchers are full partners in the development of the research project. Six sharing circles will be held in February 2018 across Alberta, with Elders, FN patients, FN and non-FN clinicians and FN and non-FN administrators. Sharing circles are similar to focus groups, but emphasize everyone having a turn to speak and demonstrating respect among participants in accordance with FN protocols. Elders will select the questions for discussion based on topics that arose in initial team meetings. Sharing circle discussions will be audio recorded and transcribed. Analysts will include both Western and Indigenous worldview researchers, who will collaboratively interpret findings. Elders will review, discuss, contextualize and expand upon study findings. The research is also guided by FN principles of

Ownership, Control, Access, and Possession of FN information. It is through these principles that First Nation research projects can truly be classified as FN lead and driven. **Results:** Based on initial team meeting discussions, results of sharing circles are expected to provide insights on issues such as: healing, patient-provider communication (verbal and non-verbal), shared decision making, respect for patient preferences, experiences leading to trust or distrust, understandings of wait times and triage, times when multiple (repeat) ED presentations occur, distances travelled for care, choosing specific EDs when seeking care, impacts of stereotypes about FN patients, and racism and reconciliation. **Conclusion:** Understanding FN ED experience and bringing FN perspectives to Western conceptions of the goals and provision of ED care are important steps toward reconciliation.

Keywords: First Nations, participatory research methods, patient experience

P101

Sex-specific Troponin T cutoffs for ruling out acute myocardial infarction at ED arrival

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Introduction: ex-specific diagnostic cutoffs may improve the test characteristics of high-sensitivity troponin assays for the diagnosis of myocardial infarction. Sex-specific cutoffs for ruling in MI improve the sensitivity of the assay for MI among women, and improve the specificity of diagnosis among men. We hypothesized that the use of sex-specific high-sensitivity Troponin T (hsTnT) cutoffs for ruling out MI at the time of ED arrival would improve the classification efficiency of the assay by enabling more patients to have MI ruled out at the time of ED arrival while maintaining diagnostic sensitivity. The objective of this study was to quantify the test characteristics of sex-specific cutoffs of an hsTnT assay for acute myocardial infarction (AMI) when performed at ED arrival in patients with chest pain. **Methods:** This retrospective study included consecutive ED patients with suspected cardiac chest pain evaluated in four urban EDs were, excluding those with ST-elevation AMI, cardiac arrest or abnormal kidney function. The primary outcomes was AMI at 7 days. Secondary outcomes included major adverse cardiac events (MACE: all-cause mortality, AMI and revascularization) and the individual MACE components. We quantified test characteristics (sensitivity, negative predictive value, likelihood ratios and proportion of patients ruled out) for multiple combinations of sex-specific rule-out cutoffs. We calculated net reclassification improvement compared to universal rule-out cutoffs of 5ng/L (the assays limit of detection) and 6ng/L (the FDA-approved limit of quantitation for US laboratories). **Results:** 7130 patients, including 3931 men and 3199 women, were included. The 7-day incidence of AMI was 7.38% among men and 3.78% among women. Universal cutoffs of 5 and 6 ng/L ruled out AMI with 99.7% sensitivity in 33.6 and 42.2% of patients. The best-performing combination of sex-specific cutoffs (8g/L for men and 6ng/L for men) ruled out AMI with 98.7% sensitivity in 51.9% of patients. **Conclusion:** Sex-specific hsTnT cutoffs for ruling out AMI at ED arrival may achieve substantial improvement in classification performance, enabling more patients to be ruled out at ED arrival, while maintaining acceptable diagnostic sensitivity for AMI. Universal and sex-specific rule-out cutoffs differ by only small changes in hsTnT concentration. Therefore, these findings should be confirmed in other datasets.

Keywords: myocardial infarction, cardiology, Troponin