

between 2010 and 2014. Patients were excluded if aged under 19. Multiple data were abstracted from charts using a standardized form. Regression analysis was used to compare criteria that predicted return of spontaneous circulation (ROSC) and survival to hospital admission (SHA). **Results:** 264 patients met the study inclusion criteria. Logistic regression was used to identify predictors of ROSC and SHA. The criteria that emerged as significant predictors for ROSC included; longer ED resuscitation time (Odds ratio 1.11 (1.06- 1.18)), witnessed arrest (Odds ratio 9.43 (2.58- 53.0)) and having an initial cardiac rhythm of Pulseless Electrical Activity (Odds Ratio 3.23 (1.07-9.811)) over Asystole. Receiving point of care ultrasound (PoCUS; Odds ratio 0.22 (0.07-0.69)); and having an initial cardiac rhythm of Pulseless Electrical Activity (Odds Ratio 4.10 (1.43-11.88)) were the significant predictors for SHA. Longer times for ED resuscitation was close to reaching significance for predicting SHA **Conclusion:** Our results suggest that both fixed and adaptable factors, including increasing resuscitation time, and PoCUS use in the ED were important independent predictors of successful resuscitation. Several commonly used criteria were unreliable predictors.

Keywords: cardiac arrest, resuscitation outcomes, prediction

P004

Simulation for emergency department quality improvement

J. B. Baylis, MD, J. Slinn, MN, K. Clark, MD, MMed, University of British Columbia, Kelowna, BC

Introduction: There have been an increasing number of studies published since 2011 investigating the benefits of in situ simulation as a quality improvement (QI) modality. We instituted an emergency department (ED) in situ simulation program at Kelowna General Hospital in 2015 with the aims of improving inter-professional collaboration, improving team communication, developing resident resuscitation leadership skills, educating ED professionals on resuscitation medical expertise, and identifying QI action items from each simulation session. **Methods:** We applied the SMART framework. Our specific, measurable, and attainable goal was to select two QI action items discovered from each simulation session. Realistic and timely follow-up on each action item was conducted by the nurse educator group who reported back to the local ED network, pharmacy, or manager depending on the action item. This ensured sustainability of our model. **Results:** A total of 65 individuals participated in 2015 at program inception. This increased to 213 individuals in 2017 with an average of 24 participants/session. Attendants included nurses (31%), ED physicians (20%), ED residents (18%), paramedics (10%), and medical students, respiratory therapists, pharmacists, and others (21%). Our QI action items were grouped as (1) team/communication, (2) equipment/resources, and (3) knowledge/tasks. Examples of each category were: (1) Inability to hear paramedic bedside reports resulting in reinforcement of one paramedic speaking while the team remains quiet, (2) Difficulty in looking up medication information in the resuscitation bay resulting in installation of an additional computer in the resuscitation bay, and (3) Uncertainty of local process for initiating extra corporeal membrane oxygenation (ECMO) in the ED resulting in review of team placement, patient transfer, and initiation of ECMO lines in the ED. Inter-professional team members have reported through electronic feedback on the value of these sessions, including improved inter agency cooperation and understanding. **Conclusion:** This quality improvement initiative used in situ simulation as a QI tool. We were able to identify latent safety threats, test new patient care protocols, find equipment issues, and foster teamwork in a sustainable way to improve the quality of care in our ED. We hope that this serves as encouragement

to others who are initiating a similar program. Our main suggestions after reflection include: (1) Engage a multidisciplinary team in the development of an in situ simulation program, (2) Start with aims and objectives, (3) Foster attendance and buy in by making it convenient for people to attend, (4) Celebrate your successes through interdepartmental communication, and (5) Recruit individuals with expertise in simulation based education.

Keywords: quality improvement and patient safety, simulation, emergency department

P005

Optimum accuracy of massive transfusion protocol activation criteria: the clinician's view

C. Bell, BSc MPT, P. Davis, MD, MSc, O. Prokopchuk-Gauk, MD, B. Cload, PhD, MD, A. Stirling, MD, College of Medicine, University of Saskatchewan, Regina, SK

Introduction: Massive Transfusion Protocol (MTP) activation allows for efficient delivery of a balanced transfusion strategy to exsanguinating patients, and should deliver a reasonable ratio of plasma and platelets to red blood cells. MTP activation should facilitate communication between care providers and laboratory services in order to minimize blood product wastage. Unfortunately, it is unclear which activation criteria are best to achieve this. Understanding of acceptable sensitivity and specificity, as well as reasons for blood component wastage, may provide refinement to MTP design. **Methods:** We surveyed clinicians, who were identified as content experts in their fields, using a snowball survey technique. Respondents were categorized into two groups: Group 1 included Emergency Medicine, Anesthesia, Critical Care, and Surgery; Group 2 included Hematology, Hematopathology and Transfusion Medicine. Between-group differences were examined using the Pearsons Chi-Square Test. Statistical significance was set at $p < 0.05$. **Results:** 50% of physicians in Group 1 considered an MTP under-call rate of 5-10% to be acceptable, whereas the majority (57.1%) of physicians in Group 2 considered an under-call rate of <5% to be acceptable. Both groups agreed on an acceptable over-call rate of 5-10%. A significantly greater proportion of physicians in Group 1 felt that MTP activation criteria including transfusion of an entire blood volume within 24 hours, loss of >50% blood volume within 3 hours and anticipated transfusion of >10U of PRBC in 24 hours were appropriate for MTP activation. Physicians in Group 2 were more likely to consider poor communication a reason for blood component wastage. **Conclusion:** Similarities in acceptable over- and under-call rates of MTP highlight the similar values in MTP activation between different medical specialties. Collaboration between the resuscitation team and consultants in transfusion medicine is necessary for MTP protocol development to improve patient outcomes and reduce blood wastage.

Keywords: transfusion, resuscitation, survey

P006

Patient passports in the emergency department: a scoping review

C. B. Bennett, BSc, J. Curran, PhD, Dalhousie Medical School, Halifax, NS

Introduction: Discharge communication in the emergency department occurs frequently and has been identified as an important, underestimated problem. Tools, such as patient or caregiver-held passports have been used in other departments to improve communication and facilitate provider and patient decision making. The objective of this review was to identify what modalities, methods and designs have been

used and evaluated when implementing a communication tool or passport type document in the emergency department setting. **Methods:** This review was conducted following Joanna Briggs Institute methodology. Iterative steps included identifying the research question, identifying relevant studies, data extraction and synthesis. Keywords and indexed terms were used to search PubMed, Cinahl, Embase and Web of Science. The reference list of all identified reports and articles from that search were reviewed for additional studies and a hand search of the last 5 years of *Annals of Emergency Medicine* and the *Canadian Journal of Emergency Medicine* was completed. Inclusion criteria were set to select studies investigating either patients, caregivers or health care providers use of passports, communication documents or journals with the goal of improving any aspect of communication in the emergency department setting. **Results:** Of the 81 potential publications screened, only 4 met inclusion criteria for extraction. 1 reviewed a passport that aimed at pediatric pain management in settings that include the emergency department, 2 of the publications reported on the same project which developed a passport for asthma patients and 1 discussed a passport for patients with learning disabilities. All the included publications were published in and discuss passports that were developed for use in the UK. Descriptions of implementation, evaluation and perception of the passports in these publications was limited. **Conclusion:** This scoping review has revealed a major gap in the current literature on communication tools in the emergency department, a department where communication, especially about discharge is of utmost importance. The included studies focused on very different patient populations and aim to improve different outcomes and therefore don't allow us to make for passports aimed at helping the general emergency department population.

Keywords: communication, passport, discharge communication

P007

Safety and effectiveness of a care protocol to treat migraine with Propofol in the emergency department

S. Berthelot, MD, MSc, S. Baril, M. Mallet, MA, S. Côté, MD, PhD, Département de médecine familiale et de médecine d'urgence de l'Université Laval, Quebec, QC

Introduction: An evidence-based care protocol to treat migraine with low-dose Propofol was implemented in May 2014 at the emergency department (ED) of the CHUL (Québec city). Given potential side effects of Propofol, we aimed to evaluate the safety and effectiveness of this protocol. **Methods:** We reviewed charts of all patients aged 16 years and older who received Propofol between May 2014 and August 2017 for a migraine headache with or without aura, as defined in the International Headache Society Classification. The care protocol consisted of: 1) administration of intra-venous Propofol 20 mg each 5 to 10 minutes as needed (maximum of 6 doses); 2) sets of vital signs before and after each dose; and 3) continuous cardiac and saturation monitoring. Our primary outcome measures were the incidence (95% CI) of the following side effects: low arterial pressure (<90 systolic or <65 mean), desaturation (SaO₂ <92%), excessive sedation (scores 3 or 4 on the Pasero scale), and any arrhythmia. We also compared the mean reduction (95% CI) of pain pre- and post-treatment (visual analog scale VAS 0-10) and the proportion (95% CI) of rescue medication among patients who received Propofol as first-line medication to a matched cohort of patients who had Metoclopramide first. The two cohorts were paired for gender, age, triage priority, and month/year of ED visit. **Results:** Over the 3-year study period, 45 patients with migraine received Propofol through the care protocol, either as a first-line or a rescue therapy. In this cohort, hypotension, bradycardia

(<60/min) and desaturation occurred in 17.8% (8.0-32.1), 13.3% (5.1-26.8) and 6.7% (1.4-18.3) of cases respectively; no excessive sedation was reported. An intervention was undertaken in 4 cases [8.9% (2.5-21.2) 3 iv fluid bolus, 1 supplemental oxygen] to palliate the side effects of Propofol. A statistically significant mean reduction of 3.6 points (2.8-4.4) on the VAS scale was observed in patients treated with Propofol as first-line therapy (n=35). However, patients managed with first-line Metoclopramide (n=100) experienced a significantly higher mean reduction of their VAS score [5.3 (4.6-6.0)] than the Propofol group (p=0.003). The proportion of patients requiring the use of rescue medication was higher among patients first treated with Propofol [77.1% (63.2-91.1) vs. 29.0% (20.1-37.9); p<0.001]. **Conclusion:** Our care protocol to treat migraine with low doses of Propofol appears to be safe and to cause very few side effects prompting corrective interventions. Continuous (as opposed to intermittent) heart and saturation monitoring is probably not indicated. Given the effectiveness of Propofol compared to Metoclopramide, our care protocol will be used as a second-line therapy.

Keywords: quality improvement and safety, migraine, Propofol

P008

Hereditary Angioedema Rapid Triage Tool (HAE-RT): translating clinical research into clinical practice

S. Betschel, HBSc, MD, E. Avilla, S. Waserman, MD, J. Badiou, K. Binkley, MD, R. Borici-Mazi, MD, J. Hebert, MD, L. Howlett, A. Kanani, MD, P. Keith, MD, G. Lacuesta, MD, W. Yang, MD, A. Rowe, P. Waite, Department of Internal Medicine, University of Toronto Division of Clinical Immunology and Allergy St. Michael's Hospital, Toronto, ON

Introduction: Hereditary angioedema (HAE) patients (both diagnosed and undiagnosed) commonly present to the emergency department (ED). Presenting symptoms (swelling and pain) may be erroneously attributed to common allergic and gastrointestinal conditions resulting in major delays in diagnosis and appropriate treatment. No published tools currently exist for HAE screening and management in undiagnosed disease. The overall goal of the study was to develop a HAE-RT tool for ED settings. **Methods:** A two-phase mixed methods approach was used to develop the HAE-RT Tool including: Phase 1: A Delphi Study [HAE specialists (N=9) and National Patient Advocacy Group Members (N=3)] was conducted to reach consensus (80% agreement) on predictor variables to include. Phase 2: A retrospective chart review was conducted to assess the predictive findings of the predictor variables. A convenient sample of patients presenting with angioedema (with and without HAE) between January 2012 January 2017 were included in the study. **Results:** Of the 12 experts invited, 9 (75%) participated in the Delphi study. Of 8 HAE-specific predictive variables, 4 reached consensus including: (1) recurrent angioedema; (2) absence of urticaria; (3) past recurrent abdominal pain/swelling; (4) response to allergic therapy. The retrospective study included 85 patients (N=46 with HAE; N=39 non-HAE; overall 72% female). HAE patients were significantly more likely to have a family history of HAE (72% vs. 0%; P<0.0001); previous recurrent angioedema (96%; P<0.009); present with no hives (91%; P<0.036); previous recurrent abdominal pain (80%; P<0.0001); and only 2% responded positively to allergy treatments (P<0.0001). **Conclusion:** Our study emphasizes the importance of key stakeholder involvement and feedback to facilitate the prioritization of important information that must be included in the design of an HAE-RT tool. The next step is to observe the effect of the HAE-RT tool on patient triage in the ED.

Keywords: hereditary angioedema, clinical decision support tools, triage