

Introduction: Global Emergency Medicine (Global EM) is growing rapidly as an academic niche in Canada. An increasing number of Canadian emergency physicians work internationally as part of their practice, and trainees consistently seek out international projects and electives. For the most part however, residents have had to create their own training opportunities as formal Global EM fellowship training has been lacking in Canada. To address this identified need, Queens University established a Global EM fellowship, the first of its kind in the country. **Methods:** The fellowship is designed to provide the skills necessary for an academic career in Global Emergency Medicine. Curriculum and objectives are modeled on similar well-established fellowships in the United States. Areas of expertise include emergency medicine systems development, humanitarian medicine, disaster response, public health, tropical medicine, research, administration and education. Fellows have the opportunity to tailor their training according to their specific interests within these domains. Importantly, the fellowship provides direct mentorship from academic global EM and public health physicians, and networking opportunities within the global health sphere. **Results:** The two-year fellowship curriculum is divided between: 1) coursework to complete a Master of Public Health (MPH) Degree 2) fieldwork 3) relevant international emergency medicine training courses and 4) clinical work in the emergency departments at the Kingston Health Sciences Center. The Queens Global EM fellowship admitted its first fellow in August 2017. To date, the inaugural fellow has completed the MissionCraft Leadership in Disaster Relief course as well as a Humanitarian U Disaster and Response course, in addition to submitting a research grant as a co-principal investigator, starting coursework for an MPH degree and giving several invited lectures on humanitarian medicine. The fellow also travelled to Lebanon to support research in collaboration with aid organizations responding to the Syrian crisis. Upcoming fieldwork involves teaching at a newly established emergency medicine residency program in Haiti as well as a humanitarian crisis deployment. **Conclusion:** In response to a lack of formal international emergency medicine training opportunities in Canada, Queens University has established a Global Emergency Medicine fellowship. The fellowship aims to provide protected time, access to field opportunities and dedicated mentorship to develop the skills necessary to succeed as an academic Global EM physician. We believe it provides a unique opportunity to significantly expand fellows experiences in global health fieldwork, education and research while continuing to practice in a Canadian tertiary emergency department. **Keywords:** innovations in emergency medicine education, global emergency medicine, global health training

MP22

Improving treatment of children's presenting and procedural pain for emergency department visits: a province-wide quality improvement collaborative

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Introduction: Pediatric pain is often under-treated in emergency departments (EDs), which is known to cause short and long-term harm. A recent quality improvement collaborative (QIC) was successful in improving treatment of children's pain across 4 EDs in our city. A new QIC was then formed among EDs across our province to improve treatment of presenting and procedural pain. Aims were to improve the proportion of children <12 years of age who receive topical anesthetic

before needle procedures from 13% to 50%; and for children <17 years of age with fractures: to 1) improve the proportion who receive analgesic medication from 35% to 50%; 2) improve the proportion who have a documented pain score from 23% to 50%, and 3) reduce median time to analgesia from 59 minutes to 30 minutes, within 1 year. **Methods:** Invitations to participate in the QIC were sent to all 113 EDs in the province that treat children and had not participated in the previous QIC. Each site was asked to form a project team, participate in monthly webinars, develop key driver diagrams and project aims, undertake PDSA tests of change, and audit charts to assess performance. Sites are given a list of 20 randomly selected charts per month for audit. Audit data was entered into REDCap and uploaded to a provincial run chart dashboard. All participating sites received a "comfort kit" consisting of distraction items for children as well as educational materials. Measures of presenting pain included proportion of children <17 years with a diagnosis of fracture who have a documented pain score, proportion who receive an analgesic medication, and minutes to analgesia. The measure for procedural pain was the proportion of children <12 years who receive topical anesthetic prior to a needle procedure for a laboratory test. Length of stay for pediatric patients and all patients were balancing measures. Run charts were used to detect special cause. Difference in proportions were compared using 2. Final analysis will include interrupted time series. **Results:** 34 of 113 invited sites (30%) agreed to participate, including rural and regional representation from all geographic zones; 4222 visits since June 2016 were analyzed. Implementation began June 2017. Comparing the first 4 months following implementation to the preceding year, the proportion of children receiving topical anesthetic prior to needles increased from 13% to 25% ($p < 0.001$). For children with fractures, the proportion with pain scores increased from 23% to 35% ($p < 0.001$), proportion receiving analgesic medication increased from 35% to 42% ($p < 0.001$), and median minutes to analgesia decreased from 59 to 43. Insufficient time points at this stage preclude identification of special cause. **Conclusion:** This province-wide QIC has already resulted in significant progress toward aims during the first 4 months of implementation. The QIC approach shows promise for improving pain outcomes in children visiting diverse EDs across a province.

Keywords: quality improvement and patient safety, quality improvement collaborative, pediatric pain

MP23

A collaborative quality improvement initiative to improve the time to electrocardiogram in patients with chest pain presenting to the emergency department

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Introduction: For patients with chest pain, the target time from first medical contact to obtaining an electrocardiogram (ECG) is 10 minutes, as reperfusion within 120 minutes can reduce the risk of death and adverse outcomes in patients with ST elevation myocardial infarction (STEMI). In 2007, Vancouver Coastal Health (VCH) began tracking key indicators including time to first ECG. The Vancouver General Hospital (VGH) Emergency Department (ED) has been troubled with the longest door to ECG times in the region since 2014. In 2016, the VGH ED Quality Council developed a strategy to address this issue, with an aim of obtaining ECGs on 95% of patients presenting to the VGH ED with active chest pain within 10 minutes of presentation within a 6 month period. **Methods:** The VGH ED Quality Council brought together frontline clinicians, ECG technicians, and other

stakeholders and completed a process map. We obtained baseline data regarding the median time to ECG in both patients with STEMI and all patients presenting with chest pain. Root cause analysis determined two main barriers: access to designated space to obtain ECGs, and the need for patients to be registered in the computer system before an ECG could be ordered. The team identified strategies to eliminate these barriers, identifying a dedicated space and undergoing multiple PDSA cycles to change the workflow to stream patients to this space before registration. **Results:** Our median times in patients with STEMI have gone from 33 minutes to 8 minutes as of June 2017. In all patients presenting with chest pain, we improved from a median of 36 to 17 minutes. As of April 2017 we are obtaining an ECG within 10 minutes in 27% of our patients, compared to 3% in 2016. Given the limitations in our data extraction process, we were not able to differentiate between patients with active chest pain versus those whose chest pain had resolved. **Conclusion:** By involving frontline staff, and having frontline champions providing real time support, we were able to make significant changes to the culture at triage. We cultivated sustainability by changing the workflow and physical space, and not relying on education only. While we have improved the times for our walk-in patients, we have not perfected the process when a patient moves immediately to a bed or presents via ambulance. Implementing small changes and incorporating feedback has allowed us to identify these new challenges early.

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

MP24

Doc in the box: effectiveness of physician initial assessment at triage in the emergency department

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Introduction: Physician Initial Assessment (PIA) time at the Montfort Emergency Department (ED) in Ottawa is one of the longest in the province. PIA, Length of Stay (LOS), and Left Without Being Seen (LWBS) are all performance measures which impact hospital funding through the pay for results (P4R) system. Increased PIA times negatively impact hospital funding, patient satisfaction and may be correlated to patient safety. Our aim was to examine whether having a physician at triage during the last hour of their shift decreased PIA time, LOS, and LWBS rate, and also to overall improve patient care received in the Emergency Department. **Methods:** During the last hour of five different Emergency Department (ED) shifts (14-15h, 16-17h, 19-20h, 22-23h, 23h-00h), the physician worked with a designated registered nurse, evaluating patients in a room adjacent to triage and the waiting room. The current study evaluated the effectiveness of having a physician perform initial assessments at triage (including history, physical and ECG) and assess the impact on PIA time, LOS, and LWBS during the specific hours that a physician is at triage. This is a pre-post retrospective study. Baseline data was collected retrospectively over a period of 20 weeks prior to the intervention (between January 2017 and June 2017). Intervention data was collected over a period of 20 weeks starting in June 2017. Statistical process control (SPC) methodologies were then applied to the pre-post data of continuous variables. PIA time and LOS averages were obtained for each hour in which the physician was stationed at triage. I (XmR) charts were used for statistical analysis. Analysis was done using QI macros in Microsoft Excel. **Results:** Reductions in PIA times of 8 minutes (14-15h), 16 minutes (16-17h), 30 minutes (19-20h), 72 minutes (22-23h) and 88 minutes (23h-00h) were demonstrated across the 5 shifts throughout the trial period.

No clear increase in LWBS wait times were demonstrated. Overall ED volumes increased modestly over the course of the intervention. Overall ED LOS in the department decreased about 25 minutes over this same period. There were no other PIA or LOS reduction initiatives taking place in the ED over the trial period. **Conclusion:** The goal of this study was to have patients seen quickly by an emergency physician at triage who would perform a rapid initial assessment and respond to needs for pain management, and order urgent testing or imaging. In this study, PIA times improved after the process change for every time period tested. One possible limitation was that this intervention likely had less adherence at the beginning of the trial as the staff adjusted to the new shift flow. This seems to be reflected in the data, since an improved process change is demonstrated near the end of the trial period. The next step in quality care improvement is to look at lab and imaging data to evaluate the utilization of tests with a physician at triage.

Keywords: quality improvement and patient safety, physician initial assessment time in the emergency department, emergency physician at triage

MP25

The quality improvement and patient safety curriculum for emergency medicine residents at the University of Toronto: results from the first cohort

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Introduction: The 2015 CanMEDS framework requires all residency programs to increase their focus on Quality Improvement and Patient Safety (QIPS). We created a longitudinal (4-year), modular QIPS curriculum for FRCP emergency medicine residents at the University of Toronto (UT) using multiple educational methods. The curriculum addresses three levels of QIPS training: knowledge, practical skills at the microsystem level, and practical skills at the organization level. Aim Statement: To increase the UT FRCP emergency medicine residents absolute score on the QIKAT-R (Quality Improvement Knowledge Application Tool Revised) by 10% after the completion of the QIPS curriculum. **Methods:** Physicians and other healthcare professionals with QI expertise collaboratively designed and taught the curriculum. We used the QIKAT-R as the outcome measure to evaluate QI knowledge and its applicability. The QIKAT-R is a validated measure that assesses an individual's ability to decipher a QI issue within the healthcare context, and propose a change initiative to address it. The first cohort of residents completed the QIKAT-R prior to the first session in 2014 (pre) and at the completion of the curriculum in 2017 (post). Each response was anonymized and scored by physicians with QI expertise. The QIKAT-R scores and comments from course evaluations are used to make yearly iterative curriculum changes. **Results:** The QIPS curriculum was implemented in September 2014. All nine residents in the first cohort completed the curriculum; they demonstrated an absolute increase of 19.6% (5.3/27) in the mean QIKAT-R score (13.0 +/- 3.3 pre vs. 18.3 +/- 3.8 post, p=0.001). Of the pre-test responses, 26% were categorized as poor, 70% as good, and 4% as excellent, whereas of the post-test 11% of responses were categorized as poor, 37% as good, and 52% as excellent (p < 0.001). Two iterative curriculum changes were made at the end of each academic year since 2014: (1) The time between sessions were decreased to promote knowledge retention, and (2) different PGY3 QI practical project options were provided to suit residents individual QI interests. QIKAT-R scores and resident feedback were used to