

**MP34****Evaluation of real-time virtual support for rural emergency care**

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**Introduction:** In many rural and remote communities in BC, family physicians who are providing excellent primary and emergency care would like to access useful, timely, and collegial support to ensure the highest quality of health services for their patients. We undertook a real-time virtual support project in Robson Valley, located in northern BC, to evaluate the use of digital technologies such as videoconferencing for on demand consultation between family physicians at rural sites and emergency physicians at a regional site. Telehealth consults also occurred between rural sites with nurses at community emergency rooms consulting with local on-call physicians. Our aim was to use telehealth to facilitate timely access to high quality, comprehensive, coordinated team-based care. An evaluation framework, based on the Triple Aim sought to: 1) Identify telehealth use cases and assess impact on patient outcomes, patient and health professional experience, and cost of health care delivery; and 2) Assess the role of relationships among care team members in progressing from uptake to normalization of telehealth into routine usage. **Methods:** Using a participatory approach, all members of the pilot project were involved in shaping the pilot including the co-development of the evaluation itself. Evaluation was used iteratively throughout implementation for ongoing quality improvement via regular team meetings, sharing and reflecting on findings, and adjusting processes as required. Mixed methods were used including: interviews with family physicians, nurses, and patients at rural sites, and emergency physicians at regional site; review of records such as technology use statistics; and stakeholder focus groups. **Results:** From November 2016 to July 2017, 26 cases of telehealth use were captured and evaluated. Findings indicate that telehealth has positively impacted care team, patients, and health system. Benefits for care team at the rural sites included confidence in diagnoses through timely access to advice and support, while emergency physicians at the regional site gained deeper understanding of the practice settings of rural colleagues. Nevertheless, telehealth has complicated the emergency department work flow and increased physician workload. Findings demonstrated efficiencies for the health system, including reducing the need for patient transfer. Patients expressed confidence in the physicians and telehealth system; by receiving care closer to home, they experienced personal cost savings. Implementation saw a move away from scheduled telehealth visits to real use of technology for timely access. **Conclusion:** Evidence of the benefits of telehealth in emergency settings is needed to support stakeholder engagement to address issues of workflow and capacity. This pilot has early indications of significant local impact and will inform the expansion of emergency telehealth in all emergency settings in BC.

**Keywords:** quality improvement and patient safety, telehealth, rural

**MP35**

**An educational and audit-and-feedback approach to decreasing unnecessary intravenous therapy in low-acuity emergency patients**  
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**Introduction:** Intravenous (IV) therapy in the emergency department (ED) is associated with risk of harm from IV complications, higher ED monitoring requirements and increased ED length of stay (LOS), the

latter a measure most cumbersome in lower-acuity patients that are eventually discharged from the ED. The aim of this quality improvement project was to evaluate the effectiveness of educational and audit-and-feedback interventions, with a goal of relative reduction of ED IV therapy by 20% over eight week periods, in lower-acuity patients in the high-turnover intake area of the ED who were discharged from the ED. **Methods:** The first cycle of the project was education about IV therapy use and alternatives in lower-acuity, ED patients (Canadian Triage Acuity Scale (CTAS) 3 and 4) from July 2 to August 31, 2017. Education was delivered through email information, posters, education sessions with nurse educators, and working groups sharing information. The second cycle of the project, from October 16 to December 15, 2017, also integrated an audit-and-feedback tool whereby physicians received their own pooled ordering data of IVs from the same period the previous year and then trial period as well pooled comparison averages for the physician group in the population of interest. Measures were the percentage of IVs ordered by physicians and administered by nurses in the population of interest in each time period. **Results:** From July 2 to August 31, 2017, when the intervention was education only, the rate of IV therapy changed from 31% to 37%, which reflects a 19% relative increase in IV use. In the beginning of the second cycle utilizing both education and audit-and-feedback interventions, from October 16 to December 15, 2017, 35% of patients had IV therapy. At the end of the second cycle, 25% of patients had IV therapy, a 28% relative decrease in IV therapy rates. When both cycles are reviewed sequentially, IV therapy rates decreased from 31% to 25%, a relative reduction of IV usage of 19%. **Conclusion:** In this quality improvement project, an educational initiative for the interdisciplinary team alone did not reduce IV use in lower-acuity patients. Concurrent education and audit-and-feedback interventions were more effective than education alone in decreasing IV therapy in appropriately selected patients in a tertiary ED. **Keywords:** quality improvement and patient safety, audit and feedback, intravenous therapy use

**MP36**

**Can one emergency physician improve department flow? A proof-of-concept trial of a physician float role**

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**Introduction:** Emergency departments (EDs) are overcrowded and patient acuity and volumes are ever-increasing. While changes to the flow of ED patient input and output are outside the control of frontline ED teams, the efficiency of ED throughput can be optimized. One widely studied intervention is the implementation of a physician liaison role to assist in managing overall ED flow. The Physician Float (PF) acts as a triage liaison, second physician for resuscitations, ED procedural sedation physician, and fields ED referral calls. This is a first-iteration proof-of-concept trial to plan, implement and evaluate if the PF role could decrease ED length of stay (LOS) by a goal of 30 minutes, over a four-week period, without adverse changes to left without being seen (LWBS) and bounce-back rates. **Methods:** The PF role was implemented as a scheduled emergency physician shift in the fall of 2017. Ongoing iterations of this role implementation are being reviewed for re-implementation. The primary outcome measure was ED LOS; secondary outcomes included time-to-physician initial assessment (PIA), EMS offload rates, and LWBS and 72-hour bounce-back rates. Qualitative data including patient concerns and physician feedback were also collected. Data were collected after the trial from a

centralized, de-identified ED information system database with time-stamp quantifiers and compared to the following four-week time period where the shift is a regular ED physician shift at the same time. The ED physician and nursing team planned and implemented the PF role, then results were evaluated and shared with the wider ED staff in departmental grand rounds and quality council presentation formats, and recommendations were gathered from to adjust and strengthen future iterations of PF role implementation. **Results:** Descriptive statistics and Mann-Whitney and Median tests were calculated. On average there were 185 daily ED visits in the trial and comparison periods. Median ED LOS decreased by 12 minutes in the PF trial period ( $p < 0.05$ ). Furthermore, there was a 12 minute decreased ED LOS for all discharged patients ( $p < 0.05$ ). PIA time decreased by 13 minutes for patients that were admitted. The average percentage of EMS offloads within 60 min improved from 75% to 80.7% for admitted patients. LWBS and 72-hour bounce-back rates were unchanged. No additional patient concerns arose related to or during the trial. Physician feedback on the PF role was mainly positive. **Conclusion:** The defined role of a PF in an ED can decrease ED LOS, albeit not achieving the desired 30-minute reduction on the first iteration, this trial supported proof-of-concept for implementation of a PF role in a tertiary care centre ED. Further iterations are needed to evaluate the scalability and sustainability of this role.

**Keywords:** quality improvement and patient safety, physician float, emergency department throughput

### MP37

#### Conceptualizing unnecessary care in emergency departments (ED): qualitative interviews with ED physicians and site chiefs

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**Introduction:** Unnecessary care is an increasingly commonly used term in medicine. Previous survey research suggests that definitions of unnecessary care vary within and among professional and patient groups. This research explores how emergency physicians and administrators understand the term unnecessary care. **Methods:** Site chiefs and emergency physicians in an Alberta region were recruited through email and online surveys respectively for a qualitative study. One hour one-on-one in-depth interviews explored understandings of unnecessary care within the emergency department (ED) context. Interview transcripts underwent thematic analysis. **Results:** Five physicians and seven site chiefs completed interviews. Two key themes emerged. First, interviewees conceptualized unnecessary care as inappropriate or non-urgent presentations. This patient-centric view raised non-urgent ED presentations as a health system problem with complex components, including: lack of public knowledge of healthcare resources, shrinking comfort and scope of community providers and patient willingness to utilize other resources. Despite concerns over non-urgent visits, interviewees expressed that these patients still need to be seen, assessed and managed. The second conceptualization focused on over-investigation (and to lesser extent, treatment). This physician-centric conceptualization identified issues around: variation in physician risk tolerance, established decision rules with the allowable miss rates, patient expectation for testing or physician feeling that the patient was owed something or that patient would not accept their diagnosis/treatment without testing. Additionally, interviewees described patient characteristics that may initiate more aggressive investigation (e.g., patient reliability, follow-up care access, etc.). An overarching concern about the connection between unnecessary care and wasted resources was identified.

Additionally, interviewees emphasized that patient conversations are outside the scope of unnecessary care despite their possible implications for limited time resources. **Conclusion:** A range of concepts surrounding unnecessary care in the ED were identified. Further exploring nuances of these conceptualizations may inform and improve the effectiveness of campaigns seeking to improve efficiency in practice and reduce inappropriate care. Additionally, this work provides an impetus for developing clearer concepts of care within the ED.

**Keywords:** unnecessary care, qualitative research

### MP38

#### Barriers and facilitators to physician use of computerized clinical decision support for mild traumatic brain injury and suspected pulmonary embolism

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**Introduction:** As utilization of CT imaging has risen dramatically, evidence-based decision rules and clinical decision support (CDS) tools have been developed to avoid unnecessary CT use in low risk patients. However, their ability to change physician practice has been limited to date, with a number of barriers cited. The purpose of this study was to identify the barriers and facilitators to CDS adoption following a local CDS implementation. **Methods:** All emergency physicians at 4 urban EDs and 1 urgent care center were randomized to voluntary evidence-based CT imaging CDS for patients with either mild traumatic brain injury (MTBI) or suspected pulmonary embolism (PE). CDS was integrated into the computerized physician order entry (CPOE) software and triggered whenever a CT scan for an eligible patient was ordered. Physicians in both the MTBI and PE arms were ranked according to their CDS use, and a stratified sampling strategy was used to randomly select 5 physicians from each of the low, medium and high CDS use tertiles in each study arm. Each physician was invited to participate in a 30-minute semi-structured interview to assess the barriers and facilitators to CDS use. Physician responses were reported using a thematic analysis. **Results:** A total of 202 emergency physicians were randomized to receive CDS for either MTBI or PE, triggering CDS 4561 times, and interacting with the CDS software 1936 times (42.4%). Variation in CDS use ranged from 0% to 88.9% of eligible encounters by physician. Fourteen physicians have participated in interviews to date, and data collection is ongoing. Physicians reported that CDS use was facilitated by their confidence in the evidence supporting the CDS algorithms and that it provided documentation to reduce medico-legal risk. CDS use was not impeded by concerns over missed diagnoses or patient expectations. Reported barriers to CDS use included suboptimal integration into the CPOE such as the inability to auto-populate test results, it disrupted the ordering process and was time consuming. A common concern was that CDS was implemented too late in workflow as most decision making takes place at the bedside. Physicians did not view CDS as infringing on physician autonomy, however they advised that CDS should be a passive educational option and should not automatically trigger for all physicians and eligible encounters. **Conclusion:** Physicians were generally supportive of CDS integration into practice, and were confident that CDS is an evidence-based way to reduce unnecessary CT studies. However, concerns were raised about the optimal integration of CDS into CPOE and workflow. Physicians also stated a preference to a passive educational approach to CDS rather than an automatic triggering mechanism requiring clinical documentation.

**Keywords:** clinical decision support, knowledge translation, barriers and facilitators