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Improving urology care in the emergency department through implementation of an Acute Care Urology model

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Introduction: Renal colic is one of the most common presentations to the emergency department (ED), and often requires complex interdisciplinary collaboration between emergency physicians and urology surgeons. Previous literature has shown that adoption of interdisciplinary rapid referral clinics can improve both timeliness of care and patient outcomes. However, these Acute Care Surgery models have not yet been commonly adopted for urology care in the ED. **Methods**: In July 2016, we adopted the intervention of an Acute Care Urology (ACU) model through the creation of a rapid referral clinic dedicated to ED patient referrals, the addition of an ACU surgeon, and enhanced use of daytime OR blocks. We conducted a manual chart review of 579 patients presenting to the ED with a complaint of renal colic. Patient data was collected in two separate time periods to analyze trends before implementation of the ACU model (pre-intervention, September - November 2015), to examine the model's impact (post-intervention, September - November 2016). Secondary methods of evaluation included a survey of 20 ED physicians to capture subjective feedback through Likert scale data. **Results**: Of the evaluated 579 patients with a complaint of renal colic,194 patients were discharged from ED with an diagnosis of obstructing kidney stone and were referred to urology for outpatient care. The ED-to-clinic time was significantly lower for those in the ACU model ($p < 0.001$). The mean time to clinic was 15.76 days (SD = 15.47, range 1-93) pre-intervention versus 4.17 days (SD = 2.33, range = 1-12) post-intervention. Furthermore, the ACU clinic allowed significantly more patients to be referred for outpatient care ($p = 0.0004$). There was also higher likelihood that patients would successfully obtain an appointment following referral ($p = 0.0055$). Decreasing trends were shown in mean ED wait time, in addition to time from assessment to procedure. Results of the qualitative survey were overwhelmingly positive. All 20 surveyed ED physicians were more confident that outpatients would be seen in a timely manner (85% strongly agree, 15% agree). Qualitative feedback included the belief that follow-up is more accessible, that ED physicians are less likely to page the on-call urologist, and that they are able to discharge patients sooner. **Conclusion**: The ACU model for patients with renal colic may be beneficial in reducing ED-to-clinic time, ensuring proper follow-up after ED diagnosis, and improving patient care within the ED.

Keywords: colic, renal, urology

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Emergency physicians' self-reported management of benign headache in Alberta emergency departments

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Introduction: Benign headache (BHA) management varies across emergency departments (EDs). This study documented current BHA management by Alberta emergency physicians (EP) in order to develop a provincial intervention to improve standardized practice. **Methods**: A convenience sample of Alberta EPs completed an online survey exploring their ED BHA management practices. Results are expressed as proportions. **Results**: A total of 73 EPs (73/192; 38%) who were mostly male (63%) and practiced emergency medicine for at least 15 years (51%) responded. EPs reported routine ED orders for metoclopramide (97%), ketorolac (90%) and IV fluids (85%) for patients with BHA showing no signs of pathological headache. For moderate-severe BHA's that did not improve with routine treatment, preferences were: IV narcotic (58%), IV dexamethasone (44%), and IV/IM dihydroergotamine (27%). Typically, EPs reported not ordering investigations for moderate-severe BHA presentations (88%); however, for those not improving the most common investigation was computed tomography (CT; 47%). CT ordering was associated with the following clinical scenarios: 1) not responding to traditional therapy and consulted to specialist (64%); 2) not responding to traditional therapy and being admitted (64%); 3) first presentation and afebrile (19%); 4) severe pain (11%); and 5) responding to traditional therapy and febrile (11%). One-quarter of EPs (27%) believed their patients usually or frequently expected a CT. Most EPs (60%) reported being completely or mostly comfortable discussing CT risks. Only 44% reported always or usually discussing risks prior to ordering. EPs reported that they were most frequently prevented from discussing risks because the patient was critically ill (42%) or because they believed explaining risks would not alter patient expectations (21%). These concerns were mirrored in the barriers EPs anticipated to limiting imaging, specifically the fear of missing a severe condition (62%), and patient expectation/request for imaging (48%). **Conclusion**: Self-reported treatment preferences for uncomplicated BHAs appear to be relatively consistent. Chart reviews could help assessing the reliability of self-reported BHA management practices. Perceived patient expectation appears to be an important influence on EP imaging ordering. Studies examining the communication between EPs and their patients are needed to explore how these expectations and perceived expectations are negotiated in the ED.

Keywords: benign headache, computed tomography, emergency department

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Do QR codes effectively engage patients in research while visiting the emergency department?

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Introduction: Efforts to engage patients in research when presenting to emergency departments (EDs) have explored the utility of online tools; for example, through QR-based applications. It is unclear whether these are effective strategies for engaging patients in research activities while saving costs of in-person surveys. This study evaluated whether patients would participate in QR codes or short URL-linked surveys available in EDs across Alberta. **Methods**: A patient waiting room poster was developed as part of a stepped-wedge randomized controlled trial. The waiting room poster was introduced in 15 urban and regional Alberta EDs with a median annual volume of approximately 60,000. A QR-code and short URL were placed on the poster inviting patients to participate in an online survey and evaluate the poster's usefulness and acceptability. Additionally, written discharge instructions, which were part of the intervention materials, were distributed with QR-code and short URL link to surveys for patients to share their ED care experience. Patients were not

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prompted by any staff or research personnel to encourage use of the QR codes or the short URLs; however, a survey was conducted with ED waiting room patients in 3 urban EDs to ascertain whether they had downloaded a QR reader on their devices and the frequency of use of these applications. **Results**: Given the stepped-wedge nature of the study, these materials were available for a total of approximately 123 months (3 sites for 13 months, 4 sites for 10 months, 4 sites for 7 months, and 4 sites for 4 months). Over the study period, 15 patients accessed and completed the online survey linked to the QR code or the short URL placed on the posters. No patients completed the online surveys linked to the QR code or the short URL placed on the discharge instructions. The in-person survey conducted within the ED waiting room identified that 34% of respondents had a QR code reader downloaded on their phone (108/316). Of those with a QR reader, 33% reported using the reader at least once within the last 6 months. **Conclusion**: In this study, few patients downloaded QR readers on their electronic devices while in the ED waiting room. Without prompting, this appears to be an ineffective strategy for engaging patients in emergency medicine research. Other engagement strategies optimizing human resource investment are urgently needed to effectively conduct research in EDs.

Keywords: emergency research, patient engagement

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Piloting imaging-focused knowledge dissemination tools in Alberta emergency departments

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Introduction: Variation in image ordering exists across Alberta emergency departments (EDs). Evidence-based, pocket-sized knowledge dissemination tools were developed for two conditions (acute asthma [AA] and benign headache [BHA]) for which imaging (chest x-ray [CXR] and computed tomography [CT], respectively) has limited utility. This study explored tool acceptability among ED patients and emergency physicians (EPs). **Methods**: Tool feedback was provided by EPs, via online survey, and adult patients with AA and BHA via in-person survey. EPs qualitative interviews further explored communication tools. Preliminary descriptive analyses of survey responses and content analysis of interview data were conducted. **Results**: Overall, 55 EPs (55/192; 29%) and 38 consecutive patients participated in the AA study; 73 EPs (73/192; 38%) and 160 patients participated in the BHA study. In both studies, approximately 50% of EPs felt comfortable using the tool; however, they suggested including radiation risk details and imaging indications and removing references to imaging variation and health system cost. In the BHA study, EPs opposed the four Choosing Wisely® campaign questions fearing they would increase imaging expectations. In both conditions, most patients (>90%) understood the content and 68% felt the information applied to them. Less than half (AA:45%; BHA: 38%) agreed that they now knew more about when a patient should have imaging workup done. Following tool review, 71% of AA and 50% of BHA patients stated they would discuss their imaging needs with their ED care provider today or during a future presentation. Both patient groups suggested including: additional imaging details (i.e., indications, risk, clinical utility), removing imaging overuse references, and including instructions that encourage patients to ask their EP questions. EP interviews (n = 12) identified preferences for personalized and interactive tools. Tensions were perceived around ED time pressure as well as remuneration schemes that fail to prioritize patient conversation. Tool centralization, easy access, and connection with outpatient support were also key themes. **Conclusion**: Both patients and EPs provided valuable information on how to improve ED knowledge dissemination tools, using two chronic conditions to demonstrate how these changes would improve tool utility. Implementing these recommendations, and considering preferences of EPs and patients, may improve future tool uptake and impact.

Keywords: diagnostic imaging, knowledge dissemination, patient education

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An environmental scan of quality improvement and patient safety activities in emergency medicine in Canada

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Introduction: Quality improvement and patient safety (QIPS) activities in healthcare have become increasingly important, but it is unclear what the current national landscape is with regards to how individual EM departments are supporting QIPS activities and evaluating their success and sustainability. We sought to assess how Canadian medical school EM departments/divisions and major Canadian teaching hospitals approach QIPS programs and efforts, with regards to training, available infrastructure, education, scholarly activities, and perceived needs. **Methods**: We developed 2 electronic surveys through expert panel consensus to assess important themes identified by the CAEP QIPS Committee, including a)formal training/skill capacity; b)operational infrastructure; c)educational activities; d)academic and scholarship, and e)perceived gaps and needs. Surveys were pilot-tested and revised by authors. "Survey 1" (21 questions) was sent by email to all 17 Canadian medical school affiliated EM Department Chairs and Academic Hospitals Department Chiefs; "Survey 2" (33 questions) to 11 identified local QIPS leads in these hospitals. This was followed by 2 monthly email reminders to participate in the survey. We present descriptive statistics including proportions, means, medians and ranges where appropriate. **Results**: 22/70 (31.4%) Department Chairs/Chiefs completed Survey 1. Most (81.8%) reported formal positions dedicated to QIPS activities within their groups, with a mixed funding model. Less than half of these positions have dedicated logistical support. 11/12 (91.7%) local QIPS leads completed Survey 2. Two-thirds (63.6%) reported explicit QIPS topics within residency curricula, but only 9.1% described QIPS training for staff physicians. 45% of respondents described successful academic scholarship output, with the total number of peer-reviewed QIPS-related publications per center ranging from 1-10 over the past 5 years. A minority of participants reported access to academic supports: methodologists (27.3%), administrative personnel (27.3%), and statisticians (9.1%). **Conclusion**: This environmental scan provides a snapshot of QIPS activities in EM across academic centers in Canada. We found significant local educational and academic efforts, although there is a discrepancy between the level of formal support/infrastructure and such activities. There remains opportunity to further advance QIPS efforts on a national level, as well as advocating and supporting local QIPS activities.

Keywords: patient safety, quality improvement