

P050**Unplanned return visits to the paediatric emergency department: Caregiver and physician perspectives**

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Introduction: Unplanned return visits to the pediatric emergency department contribute to overcrowding and are used as a quality measure. They have not been well characterized in the literature making it difficult to design interventions to reduce unnecessary return visits. The aim of this study was to understand the reasons for return from the caregiver and physician perspective. **Methods:** This was a cross sectional survey performed on a convenience sample of unplanned return visits within 72 hours at the IWK Health Centre ED between February and October 2016. Exclusion criteria were: planned return visit, admission during the index visit, or triaged as Canadian Triage and Acuity Score (CTAS) 1 on return visit. Caregiver and physician surveys were developed based on themes identified in published literature. The caregiver was approached to complete a survey after triage and the most responsible physician from the return visit was asked to complete a survey immediately after discharge of the patient from their care. Demographic and clinical data were collected from the ED record from the index and return visits. The primary outcome measure was most important reason for return from the caregiver perspective. **Results:** There were 461 return visits during the study period and 67 caregivers (14.5%) were included in the final analysis. The response rate for the physician survey was 71%. Caregivers and physicians reported that the most important reason for return was a perceived progression of illness requiring reassessment (79.1% and 66.7% respectively). The majority of caregivers had a family physician on record (95%) but a minority attempted to access their family physician (19.4%) or a walk-in clinic (11.9%). Of those who contacted their family physician only 3 (23%) were offered an appointment within 48 hours and of those who did not contact their family physician 21 (38.2%) stated they would not be able to get an appointment in a reasonable amount of time. Despite this 97% would have trusted their family physician to manage their child's illness. Physicians surveyed stated that the return visit was necessary in 64.6% of cases. **Conclusion:** Caregivers returned to the ED due to a perceived progression of disease. While some cases may have been appropriate for management in a primary care setting, perceived difficulty with timely access was a barrier. Improved caregiver education about the natural history of disease and the urgency of follow up may reduce return ED visits.

Keywords: communication, pediatrics, unplanned return visits

P051**Interventions to improve emergency department consultation processes: a systematic review**

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Introduction: Emergency Department (ED) consultations are often necessary for safe and effective patient care. Delays in throughput related to ED consultations can increase a patient's ED length of stay (LOS) and contribute to ED crowding. This review aimed to characterize and evaluate interventions to improve consultation metrics. **Methods:** Eight primary literature databases and the grey literature were comprehensively searched. Comparative studies of interventions to improve ED consultation metrics were included.

Unique citations were screened for relevance and the full-texts of relevant articles were reviewed by two independent reviewers. Data on study characteristics and outcomes were extracted in duplicate onto standardized forms. Disagreements were resolved through consensus. Categorical variables are reported as proportions. Continuous variables are reported as the median of the means and total range. **Results:** After screening 2632 unique citations and 19 from the grey literature items, 24 studies were included. Seventeen interventions targeted specific conditions or speciality services, while the remainder targeted all ED presentations. Interventions fell into three broad categories: strategies to expedite patient care, including clinical pathways (42%); interventions to improve consultant responsiveness (33%); and addition of a specialized care team to the ED (25%). Overall, eight studies reported on the overall proportion of consults in the ED, of which six reported an increase in the consultation proportion (median: +0.6%, range: -11.3% to +49.6%). Six studies reported the proportion of consulted patients who were admitted, of which four reported an increase (median: +1.1%, range: -5.9% to +3.5%). On the other hand, six of seven studies reporting on time from request to consult arrival reported a decrease (median: -25 minutes, range: -66 to +3.8 minutes). Similarly, overall ED LOS was reported to be lower in 17/19 studies reporting this metric (median: -47.6 minutes, range: -600 minutes to +59 minutes). **Conclusion:** A variety of strategies have been employed to improve ED consultation processes and outcomes. Neither the proportion of consulted patients in the ED nor the proportion of admissions were improved; however, interventions appeared successful at improving consultant arrival times and overall ED LOS. Improvements in consultation processes may be an effective strategy to improve ED throughput and thereby reduce ED crowding.

Keywords: consultation, ED throughput, systematic review

P052**Breaking down the pieces: A scoping review exploring the components of image ordering interventions and trends in their outcomes in pediatric emergency medicine**

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Introduction: Clinicians treating children in the emergency department (ED) are especially concerned with the efficacy and safety of imaging. Interventions to limit imaging have been proposed to maximize benefits and avoid risks; however, the types and effectiveness of interventions employed in pediatric EDs have not been examined in detail. **Methods:** Electronic databases and grey literature were systematically searched by a medical librarian. Comparative studies of ED-based interventions reporting computed tomography (CT), radiography (XR), or ultrasound (US) outcomes were included. Interventions introducing new imaging equipment or personnel to the ED, ED diversion strategies, and pre-admission protocols were excluded. At least two independent reviewers assessed each study for inclusion based on pre-defined criteria and extracted data. Disagreements were resolved through consensus. Descriptive results are reported. **Results:** Overall, 38 pediatric studies were included. Most (66%) interventions implemented two or more components; the most common intervention components were clinical guidelines or pathways (87%) and education or information (66%). Studies were categorized by presentation type: traumatic (n = 27); non-traumatic (n = 19), or combined 'all-comers' (n = 2). Included studies reported 62 imaging

outcomes (CT = 29; XR = 20; US = 13). Among traumatic studies, 26 imaging outcomes were reported; CT was the most commonly reported outcome (CT = 15; XR = 9; US = 1). Of the CT outcomes, 33% reported significant decreases and five decreased but were either not significant or did not report significance. XR significantly decreased in 44% (4/9). In the non-traumatic studies, the most common imaging outcome remained CT (12 outcomes); 58% of which reported significant decreases. XR was the second most frequent outcome, with 63% reporting significant reductions. Combined success of the interventions to reduce CT and XR was 60%. Reported changes in ordering were less consistent in US. **Conclusion:** Multifaceted passive interventions have been implemented to reduce imaging in pediatric EDs. Most reported some success changing ordering practices, specifically among patients with non-trauma presentations. Future research exploring relationships between intervention content, effectiveness, and fidelity may provide insight into how to develop more effective interventions to change image ordering in the ED and guide which presentations to target.

Keywords: diagnostic imaging, pediatric emergency medicine, systematic review

P053

Mismatches in pre-injury activities and return-to-activity advice received by concussion patients presenting to the emergency department

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Introduction: Patients with concussion often present to the emergency department (ED). Current guidelines recommend graded return to work and physical activity (i.e., sport, recreation and exercise activities); however, whether emergency physicians target this advice based on patient-reported activities is unknown. This study aimed to assess mismatches between physicians' rest and return-to-activity advice and self-reported pre-injury work and physical activity of adult concussion patients. **Methods:** Adults (>17 years) presenting with a concussion from April 2013 to April 2015 to a study ED with Glasgow coma scale score ≥ 13 were recruited by on-site research assistants. Data on patient characteristics (i.e., age, sex, employment, and physical activity level) and activity leading to injury were collected from structured patient interviews. A structured questionnaire collected data from the treating physician about discharge advice provided. "Working" was defined as employed or enrolled in any level of school at the time of injury. "Physically active" was defined by reporting regular exercise (≥ 2 times a week) or concussed during a sports-related activity. Proportions or medians (interquartile range [IQR]) are reported, as appropriate. **Results:** Physician questionnaires were completed for 198/248 enrolled patients (median age: 37 years [IQR: 23, 49]; 46% male). Overall, 89% (177/198) were working; 110/177 (62%) received return-to-work advice, while 10/21 (48%) patients also received return-to-work advice, despite not working. Mentally strenuous work/school duties were reported by 143 patients, of which 85 (60%) were recommended cognitive rest. Overall, 148 patients were physically active and 115 (78%) of these were recommended physical rest while 124 (82%) were advised on safe return to physical activity. On the other hand, 35/50 (70%) patients who were not physically active received advice on safe return to physical

activity. Sustaining a sports-related injury significantly increased the likelihood of safe return to physical activity advice among physically active patients (Fisher's exact $p = 0.001$). **Conclusion:** There is a mismatch between concussed patients' pre-injury activities, and the rest and return-to-activity (i.e., work and physical activity) advice provided by emergency physicians. The possible effect of this mismatch on patient outcomes should be assessed in future research, as should strategies to improve emergency physician-patient communications around concussion management.

Keywords: concussion, emergency department, mild traumatic brain injury

P054

The effectiveness of emergency department-based interventions for patients with advanced or end-stage illness: a systematic review

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Introduction: Patients with advanced or end-stage illness frequently present to emergency departments (EDs), many of whom are in need of palliative care (PC). Emergency physicians have struggled in providing high quality care to these patients and there is a need to identify cost-effective PC interventions delivered in the ED to improve patient outcomes. The objective of this systematic review was to examine the effectiveness of ED-based PC interventions. **Methods:** A comprehensive search of nine electronic databases and grey literature sources was conducted to identify any comparative studies assessing the effectiveness of ED-based PC interventions to improve health outcomes of patients with advanced or end-stage illness. Two independent reviewers completed study selection, quality assessment, and data extraction. Differences were mediated via third-party adjudication. Relative risks (RR) with 95% confidence intervals (CIs) were calculated using a random effects model and heterogeneity (I²) was reported. **Results:** From 5882 potentially eligible citations, 12 studies were included. Two studies are currently on-going clinical trials, and as such, 10 studies were included in this analysis. The studies consisted of before-after studies (n = 5), RCTs (n = 4), and an observational cohort (n = 1). Interventions assessed among the included studies consisted primarily of ED-directed PC consultations (n = 6), while other studies assessed screening of patients with advanced or end-stage illness and PC needs (n = 2), education on PC for ED-staff (n = 1), and an ED-based critical care unit (n = 1). Infrequent reporting of important outcomes (e.g., Mortality, ED relapse) limited the ability of this review to conduct meaningful meta-analysis. There was no difference in patient mortality between two studies assessing ED-directed PC consultations (RR = 0.89; 95% CI: 0.71, 1.13; I² = 0%). One before-after study (RR = 0.73; 95% CI: 0.47, 1.13) and two RCTs (RR = 2.19; 95% CI: 0.40, 11.92; I² = 96%) did not identify significant differences in PC consultations intervention (implementation of ED-directed PC consultations) and control (usual care) patients. **Conclusion:** This review found limited evidence to support the recommendation of any particular ED-based intervention for patients presenting to the ED with advanced or end-stage illness. High quality studies and standardized outcome reporting are needed to better understand the impact of PC interventions in the ED setting.

Keywords: consultation, emergency department, palliative care