comparing the effectiveness and safety of low with standard ketorolac dosing in ED patients with suspected renal colic. The primary objective was to demonstrate the ability to achieve an enrolment target of 2 patients per week. **Methods:** We enrolled a convenience sample of adults presenting to an academic urban ED with unilateral flank pain suspected to be renal colic. We randomized patients to 10 mg (low dose, intervention) or 30 mg (standard dose, control). Participants, treating physicians and nurses, and researchers were blinded to treatment allocation. Our main feasibility outcome was the recruitment rate. Secondary outcomes were changes in pain scores (0-10) at 30 and 120 minutes post-ketorolac administration, vital signs, adverse events and ED length of stay. **Results:** We approached 82 patients, of whom 47 (57.3%) were eligible. Of these, 36 consented to participating and 30 were randomized. The proportion of screened patients who were enrolled was 36.6% (30/82). We completed enrolment over a 21-week period, with an average recruitment rate of 1.5 patients/week (range 0-4). The average baseline pain score for all participants was 6.9 (SD = 2.1). At 30 minutes post-ketorolac administration, the low dose group had a mean pain reduction of 2.0 points compared to a pain reduction of 1.7 in standard dose group (difference = 0.3, 90% CI: -0.7 to 1.4). **Conclusion:** These preliminary results support the possibility that low dose ketorolac may be efficacious in this patient population. We did not meet our target recruitment of 2 patients per week as this was primarily due to restricted recruitment hours. To successfully conduct a larger trial, we would need to expand both recruitment hours and the number of sites.
Keywords: ketorolac, pain control, renal colic

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Utilization and outcomes of children presenting to an emergency department by ambulance

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Introduction: Children account for a low proportion of paramedic transports. Evidence suggests that many pediatric transports are of low acuity, but there are few studies comparing these patients to those that self-present to the ED. Our primary objective was to determine if illness severity was associated with presentation by ambulance among pediatric patients. **Methods:** We undertook a single centre, retrospective cohort study at a tertiary care pediatric centre. All patients presenting to the ED in 2015 by any route other than air ambulance were eligible. Patients were divided into two groups based on the route of presentation – ambulance or self-presentation. The primary outcome was disposition decision; the secondary outcome was CTAS level. To determine whether patient discharge disposition or CTAS was associated with the method of arrival, we conducted generalized estimating equations (GEE) to account for correlation within patients with multiple ED visits. **Results:** Of the 69,092 visits, 69,034 were eligible and analyzed. Of those, 4478 (6.5%) arrived by ambulance, while 64,556 (93.5) self-presented. Those arriving by ambulance had a median age of 10 years [IQR: 2-5 years] vs. 4 years [IQR: 1.75-10 years] in the self-presenting group and were 52.6% male (vs. 52.8%). Two percent of the ambulance cohort were admitted to the ICU (vs. 0.2%), and 16.6% were admitted to the ward (vs. 5%). Patients presenting by ambulance had higher CTAS scores – 5.3% CTAS 1 (vs. 0.3%), 16.4% CTAS 2 (vs. 7.0%), 61.2% CTAS 3 (vs. 45.8%), and 17.1% CTAS 4-5 (vs. 46.9%). The odds of arriving by ambulance were 10.2 x higher for patients admitted to the ICU (OR = 10.2, 95%CI: 7.9 to 13.3) vs. those discharged home. The odds of arriving by ambulance were 64.2 x (OR = 64.2, 95% CI: 48.6 to 84.7) higher for patients CTAS 1 patients vs. CTAS 5 patients. The top 3 complaints among ambulance patients were neurological (22.5%), respiratory (22.7%), and orthopaedic (11.3%). Among self-presenting patients, the top three were general/minor (20.4%), respiratory (16.4%), and gastrointestinal (14.3%). **Conclusion:** Children presenting to the ED via ambulance are at higher risk for admission to the ward and critical care unit. It is important that paramedics have sufficient training to ensure adequate skills to manage critically ill children. Given the low proportion but higher severity of illness of pediatric transports, further research and consideration must be given to how best to enable paramedics in the management of children.
Keywords: emergency medical services, paediatrics, prehospital

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Emergency physician efficiency benchmarking and diagnostic imaging use

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Introduction: As part of our audit and feedback process, Emergency Physicians (EP) are provided feedback on flow metrics and resource utilization. We analysed the relationship between two specific metrics (adjusted workload measurement (AWM), with the number of patients seen per hour adjusted according to CTAS, and percentage of revisits within 72 hours and diagnostic imaging use. Unfortunately, we are unable to evaluate quality of care, nor appropriateness of DI indication at this stage. **Methods:** We used data from 86 physicians at an academic ED, from June 1, 2015 to May31, 2017. The Data Envelope Analysis (DEA) model incorporated performance quality measures as outputs and efficiency measures as inputs. DEA is a method widely used in physician performance analysis. The method provides a score (optimal performance efficiency-OPE) for each EP based on maximization of the performance (AWM) in proportion to the combination of efficient use of resources, diagnostic imaging (DI). The score was used to regress against demographic characteristics and training. **Results:** The median AWM was 6.8 (quartiles Q1-Q3 = 6.4-7.4) with the median diagnostic imaging use of percentages of CT (median = 10.1, 8.6-11.9), US (median = 4.7, 3.6-5.6) and x-ray (80, 74-84). The EPs who had highest AWM combined with least use of DI (OPE = 100%), provided median AWM of 9.1 (range 8.9-9.7) with percentage CT, US and x-ray medians at 5.8% (range 5.8-6.2), 2.7% (range 2.4-3.6) and 59% (range 59-72). These provided benchmarks for optimal performance indicators. We found statistically significant differences of OPE scores based on gender (men 4.1 times higher, $p < 0.001$) and degree (RCPS < CCFPEM, Other < CCFPEM, $p < 0.001$). Overall AWM diminishes at the rate of 14% (95%CI: 9-20%) for a combination of 100 DI tests ordered. In order to reach the optimal level of performance, to reach an OPE of 100%, the median CT use percentage needs to be reduced by 6% (quartile range 3.9- 7.7%), US by 2.2% (quartile range 1.5-3.4%) and x-rays by 37.2% (quartile range: 26.8-44.3%). Return visit rates were not associated with DI use, possibly due to homogeneity in the percentage of return visits. **Conclusion:** We found significant performance variations in terms of average workload measurement in proportion to the weighted average of diagnostic imaging use, with increased use of DI being associated with decreasing AWM. Percentage of return visits does not appear to be useful as a performance indicator.
Keywords: audit and feedback, diagnostic imaging, efficiency

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A phase IV real world study on the use of low dose methoxyflurane (PENTHROX™) for the treatment of moderate to severe trauma pain in the Canadian emergency department (ADVANCE-ED): an interim report on secondary outcomes

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Introduction: Inhaled low dose methoxyflurane (MEOF) was recently approved in Canada for the short-term relief of moderate to severe acute pain associated with trauma or interventional medical procedures in conscious adult patients. ADVANCE-ED is an ongoing phase IV, prospective open label study undertaken to generate real-world evidence to complement the global clinical development program through evaluation of the effectiveness of low dose MEOF in Canadian emergency departments (EDs). **Methods:** This multicentre study is enrolling adult (≥18 yrs) patients with moderate to severe acute pain (NRS0-10 ≥ 4) associated with minor trauma. To address limitations from the pivotal study, this study allows patients who were excluded in the pivotal trials: namely, those with severe (≥7) pain, and those using OTC or stably dosed analgesics for other conditions, including chronic pain. Eligible patients receive a single treatment of up to 2 x 3 mL MEOF (2nd 3 mL to be provided only upon request), self-administered by the patient under medical supervision. Rescue medication is permitted at any time, if required. **Results:** Here we describe the patient demographics and treatment satisfaction (Global Medication Performance, GMP) at 50% enrolment (n = 49). Mean (SD) patient age is 48.0 (17.1) yrs and 55.1% are female. Mean pain (SD) reported at enrolment is 8.3 (1.5), with 73.4% of patients with NRS0-10 ≥ 8. Injuries are overwhelmingly limb trauma (87.8%). The most common type is sprain/strain (40.8%), followed by fracture (32.7%). At 5 minutes post-start of administration (STA) of MEOF, 80.4% of patients reported pain relief; this increased to 91.3% at 15 minutes, and 100% of patients reported pain relief by 30 minutes post-STA. GMP was assessed as "good", "very good" or "excellent" by ≥80% of patients both 20 minutes post-start of administration (STA) of MEOF (83.3%) and at discharge (85.8%). When asked to what extent their expectation of pain relief had been met, 32.7% responded good, 26.5% responded "very good" and 22.4% responded "excellent". Three quarters of enrolled patients (75.5%) did not require rescue medication. The most common (≥5%) treatment-related adverse events were dizziness (n = 14, 28.6%) and euphoric mood (n = 4, 8.2%). No serious adverse events have been reported. **Conclusion:** Based on 50% of the patients enrolled in this prospective, open label study, responses to inhaled low-dose MEOF are within expectation for both effectiveness and tolerability.

Keywords: low-dose methoxyflurane, real-world evidence, trauma

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Feasibility of self-assessing functional status in older emergency department patients

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Introduction: Geriatric Emergency Department (ED) guidelines recommend systematic screening of older patients for geriatric syndromes. However, compliance issues to this recommendation have already been observed. Self-assessment tools could be an interesting solution as self-assessed general, mental and physical health was shown to be predictive of functional decline and mortality. The Older Americans Resources and Services scale (OARS), is a simple geriatric functional assessment scale that is widely used by professionals to quantify patients' ability to perform activities of daily living (ADL) and instrumental activities of daily living (IADL). However, its use as a self-assessment tool has never been tested. Objective: to evaluate the feasibility of the self-assessed OARS compared to its standard administration by a research assistant (RA) in older ED patients. **Methods:** A planned sub-analysis of a single center randomized cross-over pilot study in 2018 was realized. Patients aged ≥65 who consulted to the ED for any medical reason were included. Patients were excluded if they: 1) required resuscitation (CTAS 1); 2) were unable to consent/to speak French; 3) had a physical condition preventing the use of an electronic tablet. Patients were randomized 1:1 to either 1) tablet-based functional status self-assessment or 2) the RAs questionnaire administration at first, after which they crossed-over to the other assessment method. Paired t-tests were used to assess the score differences. **Results:** 60 patients were included. Mean age was 74.4 ± 7.6 and 34 (56.7%) participants were women. Mean OARS score according to RA was 25.1 ± 3.3 and mean self-assessed OARS score was 26.4 ± 2.5 ($p < 0.0001$). There was also differences when looking at the AVQ and AIVQ separately. Mean AVQ scores were 12.5 ± 1.8 and 13.5 ± 0.9 ($p < 0.0001$) and mean AIVQ scores were 12.6 ± 1.8 and 12.9 ± 1.8 ($p = 0.04$) for RA assessment and self-assessment, respectively. **Conclusion:** Our results show a statistically significant difference between RA assessment and patient self-assessment of functional status, and this difference seems to be more pronounced regarding AVQ than AIVQ. The study confirms that self-assessment of functional status by older ED patients is feasible, but further testing is required in order to confirm the validity and psychometric values of this self-administered version of the OARS.

Keywords: emergency department, functional status, self-assessment

P131

Practice patterns of emergency department physicians administering naloxone for patients with suspected opioid overdose

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Introduction: Naloxone is recommended for reversing opioid-associated respiratory depression. There is wide variability in emergency department (ED) practice patterns regarding naloxone use, dosing, and observation time post-administration. This study describes the naloxone practice patterns of ED physicians managing suspected opioid overdose patients. **Methods:** A retrospective chart review was conducted of adult patients (≥ 18 years) presenting to an academic tertiary care centre (consisting of two EDs with an annual census 150,000 visits) in 2017 with suspected opioid overdose who were administered naloxone in the ED. Patients were identified electronically and the following information was abstracted from patient charts: demographics, naloxone dosage and infusion initiation, disposition data, indications for naloxone administration, response to therapy, and adverse effects. Variability in initial and total dose was examined. Initial dose was also compared in those with cardiorespiratory compromise (CPR given, respiratory rate < 8, or desaturation below 89%) using independent samples median tests. Data was

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