co-designed and patient-centred discharge handouts, we have found a marked improvement in patient understanding, and consequently safer discharge practices. Future efforts will focus on optimizing discharge communication, both verbal and written, tailored to individual patient preferences.

Keywords: emergency department discharge, communication, discharge handouts

MP09

Canadian Community Utilization of Stroke Prevention Pilot Study-Emergency Department (C-CUSP ED)

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Introduction: Atrial fibrillation (AF) is the most common sustained arrhythmia affecting 1-2% of the population. Oral anticoagulation (OAC) reduces stroke risk by 60-80% in AF patients, but only 50% of indicated patients receive OAC. Many patients present to the ED with AF due to arrhythmia symptoms, however; lack of OAC prescription in the ED has been identified as a significant gap in the care of AF patients. **Methods:** This was a multi-center, pragmatic, three-phase before-after study, in three Canadian sites. Patients who presented to the ED with electrocardiographically (ECG) documented, nonvalvular AF and were discharged home were included. Phase 1 was a retrospective chart review to determine OAC prescription of AF patients in each ED; Phase 2 was a low-intensity knowledge translation intervention where a simple OAC-prescription tool for ED physicians with subsequent short-term OAC prescription was used, as well as an AF patient education package and a letter to family physicians; phase 3 incorporated Phase 2 interventions, but added immediate follow-up in a community AF clinic. The **primary** outcome of the study was the rate of new OAC prescriptions at ED discharge in AF patients who were OAC eligible and were not on OAC at presentation. **Results:** A total of 632 patients were included from June, 2015-November, 2016. ED census ranged from 30000-68000 annual visits. Mean age was 71 ± 15, 67 ± 12, 67 ± 13 years, respectively. 47.5% were women, most responsible ED diagnosis was AF in 75.8%. The mean CHA_2DS_2-VASc score was 2.6 ± 1.8, with no difference amongst groups. There were 266 patients eligible for OAC and were not on this at presentation. In this group, the prescription of new OAC was 15.8% in Phase 1 as compared to 54% and 47%, in Phases 2 and 3, respectively. After adjustment for center, components of the CHA_2DS_2-VASc score, prior risk of bleeding and most responsible ED diagnosis, the odds ratio for new OAC prescription was 8.0 (95%CI (3.5,18.3) $p < 0.001$) for Phase 3 vs 1, and 10.0 (95%CI (4.4,22.9) $p < 0.001$), for Phase 2 vs 1). No difference in OAC prescription was seen between Phases 2 and 3. **Conclusion:** Use of a simple OAC-prescription tool was associated with an increase in new OAC prescription in the ED for eligible patients with AF. Further testing in a rigorous study design to assess the effect of this practice on stroke prevention in the AF patients who present to the ED is indicated.

Keywords: atrial fibrillation, oral anticoagulation

MP10

How dry I am: how much fluid do paramedics give when they administer an IV fluid bolus?

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Introduction: How is "administer a fluid bolus" interpreted by paramedics? There is no existing literature describing this practice in the prehospital setting. Paramedic medical directives authorize the administration of Normal Saline 20 ml/kg to hypotensive patients (systolic BP <90). Anecdotally, auditors of Ambulance Call Reports (ACRs) and paramedics report this amount of fluid is rarely administered. The aim of this study was to determine the amount and rate of IV fluid administered by Advanced Care (ACP) and Primary Care (PCP) paramedics when they give an IV 'fluid bolus' during an ambulance call. **Methods:** We conducted a retrospective analysis of iMedic platform, electronic, ACRs (January 01, 2015 to June 30, 2015) from 8 municipal paramedic services that serve an urban and rural population of 1.4 million. ACRs containing a procedure code 351 (intravenous fluid bolus) were identified. A stratified, random sample of 20 cases per paramedic category (ACP and PCP) from each service was generated using a random number table. ACRs were manually searched, data abstracted onto spread sheets, and the results analyzed using descriptive statistics (Wizard ver 1.8.16 for Mac). **Results:** The initial sample was 220 cases. 25 were excluded for incomplete documentation, leaving 195 cases (ACP 59, PCP 136) for analysis. The mean IV fluid bolus volume delivered was: ACP 414.8 ml (95%CI: 344.2, 485.4), PCP 242.3 ml (95%CI: 210.9, 274.5). The mean rate of infusion was: ACP 22.7 ml/min (95%CI: 17.6, 27.8) PCP 15.7 ml/min (95%CI 13.2,18.1). Percentage of cases where >250 ml was infused: ACP 74.6%, PCP 44.1%. Percentage of cases where at least 10 ml/kg of fluid was given: ACP 17.0%, PCP 2.9%. Percentage of cases reaching the maximum 20 ml/kg of fluid: ACP 0.5%, PCP 0%. IV cannula size: 18G-ACP 57.4%, PCP 33.3%; 20G ACP 37.0%, PCP 56.8; 22G ACP 0.6%, PCP 9.8%. **Conclusion:** Paramedics rarely gave the amount of IV fluid they were authorized to give to hypotensive patients. On average, Advanced Care Paramedics administered significantly more fluid and gave it significantly faster than Primary Care Paramedics. ACPs were more likely than PCPs to use 18G cannulas and rarely used 22G cannulas whereas PCPs preferred to use 20G IV cannulas. Further training is required to clarify and improve the paramedic practice of IV bolus administration.

Keywords: paramedic, fluid bolus, practice

MP11

A quality improvement initiative to decrease the rate of solitary blood cultures in the emergency department

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Introduction: Best practice guidelines recommend that at least two sets of blood cultures be sent when blood cultures are required. However, high rates of solitary blood cultures are still common in the emergency department. The aim of this study was to evaluate the efficacy of different quality improvement initiatives aimed at reducing the rate of solitary blood cultures being sent to the lab on patients ultimately discharged from our emergency department. **Methods:** This was a multi-centre, multi-phase, prospective study evaluating a comprehensive education-based intervention and a second intervention that combined a computerized forcing function along with a brief education-based intervention. The results were analyzed using segmented regression analysis, as well as statistical process control charts. **Results:** The baseline rate of solitary sets of blood cultures was 41.1%. The education intervention reduced this rate to 30.3%. The introduction of a forcing function with a brief educational intervention further reduced the rate to 11.6%. This represents an absolute reduction of 29.5% from baseline (relative reduction of 71.8%). According to segmental regression

analyses, the education intervention alone did not produce a statistically significant change when factoring possible background time-related trends (P = 0.071). However, the forcing function produced a statistically significant improvement (P < 0.0005), which was maintained for 6 months. **Conclusion:** The combination of a brief education-based intervention and a computerized forcing function was more effective than education alone in reducing solitary blood culture collection in our emergency department in this time series study. Forcing functions can be a powerful tool in modifying behaviours and processes in the clinical setting.
Keywords: quality assurance, blood cultures, computerized order entry

MP12

Acute asthma presentations to emergency departments in Alberta: an epidemiological analysis of presentations

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Introduction: Asthma is a chronic condition and exacerbations are a common reason for emergency department (ED) presentations across Canada. The objective of this study was to characterize and describe acute asthma presentations over a five-year period. **Methods:** Administrative health data for Alberta from 2011-2015 was obtained from the National Ambulatory Care Reporting System (NACRS) for all adult (>17 years) acute asthma (ICD-10-CA: J45) ED presentations. All presentations to an Alberta ED with a primary or secondary diagnosis of acute asthma were eligible for inclusion. Presentations with a Canadian Triage and Acuity Scale (CTAS) score of 1 were excluded. Data from NACRS were linked with a provincial diagnostic imaging database. Data are reported as means and standard deviation (SD), medians and interquartile range (IQR) or proportions, as appropriate. **Results:** From 2011-2015, a total of 51,269 (~10,000/year) acute asthma presentations were made by 34,481 patients (~0.3 presentations per patient per year). The median age was 35 years (IQR: 25, 49 years) and more patients were female (57.2%). Few patients arrived to the ED by ambulance (6.5%) and the most frequent CTAS score was 3 (43.5%). The majority of these patients (77%) had a primary diagnosis of asthma in the ED. Differences were explored between those with a primary asthma diagnosis and those with a secondary diagnosis (e.g., ambulance arrival, length of stay, hospital admission, etc.). Although differences were statistically significant, no clinically relevant differences were identified. Patients with asthma most frequently had a co-diagnosis of acute upper respiratory infection (6.2%); other co-diagnoses included bronchitis (4.7%), pneumonia (3.7%), heart failure (0.18%), pulmonary embolism (0.15%), and pneumothorax (0.03%). For 39.3% of patients, ED management included chest x-ray. The majority of patients were discharged from the ED (92.2%) following a median length of stay of 2.2 hours (IQR: 1.2, 3.8 hours). **Conclusion:** Acute asthma remains an important ED presentation in Alberta and the absolute frequency of presentations has remained relatively stable over the past five years. Frequency of chest x-ray ordering is high and represents a target for future interventions to reduce ionizing radiation exposure, improve patient flow and reduce healthcare costs.
Keywords: emergency department, asthma, epidemiology

MP13

Characteristics and outcomes of older emergency department patients assigned a low acuity triage score

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Introduction: Older patients are a high-risk population in the Emergency Department (ED) for poor outcomes after ED visit, including return presentation and hospital admission. Little is known however about outcomes in older patients identified as "low acuity" by triage. We aim to describe the characteristics, ED workup, disposition, and 14-day outcomes of ED patients 65 years and up who are triaged as low acuity and compare them to a younger cohort. **Methods:** This health records review was done in a Canadian tertiary care ED. Included patients received a Canadian Triage Acuity score (CTAS) of 4 or 5 and were either 65 years and up ("older" group), or 40-55 years (controls). Data collected included patient demographics, tests and services involved in ED, and disposition. Return ED visit and hospital admission rates at 14 days were tracked. Data were analyzed descriptively and chi-square testing conducted to assess for differences (p < 0.05) between groups. A pre-planned stratified analysis of patients 65-74 years, 75-84, and 85 and older was conducted. **Results:** 350 patients (mean age 76.5, 56.6% female) were included in the older group and 150 in the control group (mean age 47.3, 55.3% female). Most patients presented with musculoskeletal or skin complaints (older cohort: 28.6% extremity pain/injury, 10% rash, 8.9% laceration, versus control 30% extremity pain/injury, 14.7% rash, 14.0% laceration) and were triaged to the ambulatory care area (88.6% elderly, 99.3% control). Older patients were significantly more likely than younger controls to be admitted on index visit (5.0% vs 0.3% admit rate, p = 0.016). They had a trend towards increased re-presentation rates within 14 days (13.7% vs 8.7% control, p = 0.11) and were more likely to be admitted on re-presentation (4.0% vs 0.7%, p = 0.045). In sub-group analysis, very elderly patients (85 years and up, n = 79) were more likely to be admitted (8.9%, p = 0.003). **Conclusion:** Patients 65 years of age and older who present to the ED with issues labelled as "less acute" at triage are 16 times more likely to be admitted than younger controls. Patients 85 years and up are the primary drivers of this higher admit rate. This study characterizes "low acuity" elders presenting to ED and indicates these patients are high risk for re-presentation and admission within 14 days.
Keywords: geriatrics, triage

MP14

Prospective external validation of the Ottawa 3DY screening tool for the detection of altered mental status of elderly patients presenting to the emergency department

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Introduction: Altered mental status (AMS) and cognitive impairment are common problems in elderly patients presenting to the emergency department (ED). The primary objective of this study was to test the diagnostic accuracy of the Ottawa 3DY (O3DY) screening tool for the detection of AMS in the ED. **Methods:** This was a prospective cohort study conducted at an inner city, academic ED with an annual census of 85,000 visits. Study investigators and trained research assistants screened and approached a convenience sample of patients for informed written consent. Patients completed the O3DY, Short Blessed Test (SBT) and Mini-Mental Status Exam (MMSE). Descriptive statistics using counts, medians, means and interquartile ranges (IQR) were calculated. Sensitivity and specificity of the O3DY compared to the MMSE were calculated in STATA (version 11.2). **Results:** We screened 163 patients for inclusion, 150 were eligible to participate, and 116 patients were enrolled in the final study. The median age of participants was 81 (IQR 77-85), 44.8% were female, and the most common pre-existing comorbidity was hypertension. The median ED