

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