

median age 31 years, 56.7% female). Mean antibiotic prescription rate in the RADT and control arm was 38.2% (SD 15.6) and 55.9% (SD 16.3), respectively. The use of RADT was associated with lower antibiotic prescription rate in both adults (OR = 0.60 [95% CI 0.45-0.80], $I^2 = 8\%$, N = 1407) and pediatrics (OR = 0.49 [95% CI 0.44-0.55], $I^2 = 5\%$, N = 976). There was no overall difference ($p < 0.3$) in antibiotic prescription rate among disease severity (Centor scores 1-4). The use of RADT did not significantly impact the appropriateness of antibiotic management (OR = 1.15 95% CI 0.94-1.5). **Conclusion:** The use of RADT is associated with a reduction in antibiotic prescription for patients with GAS pharyngitis without an increase in appropriate antibiotic use. Despite low prevalence of the disease in the population, antibiotic prescription rates are still high. These findings suggest great potential for antibiotic stewardship and reevaluation of current guidelines for managing GAS pharyngitis.

Keywords: rapid antigen detection test, pharyngitis, antibiotics

LO47

Use of C-reactive protein can safely decrease the number of emergency department patients with sepsis who require blood cultures

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Introduction: Sepsis protocols call for the acquisition of blood cultures in septic emergency department (ED) patients. However, the criteria for blood cultures are vague, they are costly, only positive 8-12% of the time, with up to half of these being false positives. The objective of this study was to establish if positive blood cultures could be excluded in low-risk sepsis patients with levels of CRP below 20 mg/L. **Methods:** This was a multicenter prospective cohort study of 765 ED patients at St Paul's and Mount St Joseph's hospitals in Vancouver with sepsis (2 or more SIRS criteria and infection) and none of: immunocompromised, injection drug use, indwelling vascular device or septic shock (SBP < 90 mmHg). Consecutive patients with sepsis had CRP and blood cultures obtained at the same time. **OUTCOMES:** True positive blood cultures, false positive blood cultures, positive blood cultures that changed patient management. True and false positive blood cultures were based on Infectious Disease Society of America Guidelines, and change in management was defined as change in type or length of antibiotic therapy and was blindly adjudicated by a medical microbiologist. **Results:** 765 ED patients with sepsis met inclusion criteria. Mean age was 48.3 years and 57% were male. Blood cultures were positive in 99/765 (12.9%) subjects, of which 19 were false positive (19.2%). CRP was >20 mg/L in 595/765 (77.8%) of patients. Of 170 subjects with a CRP < 20 mg/L, 3 had a positive blood culture (1.8%; 95% CI 0.1%- 5%). Management was not changed in any patient with a positive blood culture and CRP level < 20 mg/L. Of 19 subjects with a false positive blood culture, CRP was < 20 mg/L for 6 (31.6%). **Conclusion:** In this cohort of low-risk sepsis patients, based on a CRP of < 20 mg/L, acquisition of blood cultures could be safely avoided in 22.2% of patients, at significant savings to the health care system.

Keywords: sepsis, blood culture, C-reactive protein

LO48

Evaluation of the effect of nightshifts on patient outcomes: a multicenter study

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Introduction: Nightshifts may represent a more challenging work environment due to staff fatigue. Our objective was to determine if an

association exists between health outcomes for patients seen in Calgary Zone Emergency Department (ED) during nightshifts as compared to other time periods. **Methods:** Administrative data from a city-wide electronic health record was collected from four urban EDs on all discharged patients during a 2-year period: January 2015-December 2016. A total of 454,125 patient visits were included and patients with a scheduled return to the ED were excluded. Three primary outcomes were selected to assess the effects of night shifts on the quality of care received by patients in the ED at night; (i) unscheduled returns to the ED within 7 days resulting in admission, (ii) mortality within 48 hrs and, (iii) mortality within 7 days of being seen by a physician. Non-night shifts were defined as patients seen on day and evening or 700-2300. The data was analyzed using descriptive statistics and precision reported via 95% confidence intervals. **Results:** For the outcome of returns resulting in admission, a 2.6% rate was noted for patients seen at night compared to 2.3% during non-night; OR 1.15 (95% CI 1.09-1.21). Furthermore, patients seen at night had a 0.033% rate of death, while non-night patients had a 0.022% chance of death within 48 hrs of discharge; OR 1.53 (95% CI 0.98-2.38). For mortality within 7 days, the rate of death observed was 0.10% and 0.078% respectively; OR 1.24 (95% CI 0.97-1.60). **Conclusion:** Our study identified presenting to the ED at night as a potential risk factor for adverse patient outcomes using 3 primary quality of care indicators. An adjusted analysis is needed to account for potential confounding variables and effect modifiers and is underway.

Keywords: nightshifts, staff fatigue, quality of care

LO49

Characterizing highly frequent users of a large Canadian urban emergency department

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Introduction: Highly frequent users (HFU) of the emergency department (ED) remain a poorly defined and complex population. This study describes patient and visit characteristics for HFU of the ED, and analyzes subgroups of patients with mental illness, substance abuse, and/or ≥ 30 yearly ED visits. **Methods:** We performed a health records review of 250 randomly selected adults with >99th percentile of ED visit frequency (≥ 7 visits) at a tertiary care academic hospital with two EDs in 2014. Two reviewers collected demographic variables (age, sex, and comorbidities) and visit data (ED diagnosis, ED length of stay (LOS), ED presentation time (daytime 0800-1559 h, evening 1600-2359 h, overnight 2400-0759 h), consultation services, and final disposition). Data were analyzed using descriptive and univariate analyses, student t and Mann Whitney U tests. **Results:** Of 897 eligible patients who experienced 9,376 ED visits we included 250 patients (2,670 visits) in our main analyses, and an additional 11 patients (494 visits) outside of the random selection with ≥ 30 ED visits. Mean age was 53.4 ± 1.3 (SEM), and 55.6% were female. Most patients had a fixed address (88.9%), and a family physician (87.2%). Top comorbidities included gastrointestinal (61.6%), cardiovascular (52%), and chronic pain issues (47.2%). Top ED diagnoses included musculoskeletal pain (9.6%), abdominal pain (8.4%) and alcohol-related presentations (8.5%). Hospital admission was required for 15.6% of visits. From all possible visits (3164 visits), consultations for social workers, geriatric emergency medicine nurses, or Community Care Access Centres were made for 5.9% of visits, with 47.3% of these patients presenting during daytime hours. Among visits requiring these consultations, median ED LOS was greatest in the evening (12.7 hours, range 1.4-45.2 hours), compared to daytime (5.4, 1.2-33.6; $p = 0.0002$) or overnight (7.9, 1.0-38.3, $p = 0.02$).