

2013, 2014 and 2015. All adult patients who were discharged home from the ED with a diagnosis of pneumonia were included. Severity of pneumonia was graded based on the CRB-65 score as per the CAP guidelines. Primary outcome was type of antibiotic prescribed by the ED physician. Data was analyzed using simple descriptive statistics. **Results:** There were a total of 141 patients analyzed during the study period (N = 46 in 2013, N = 59 in 2014, N = 36 in 2015). Demographics and relevant comorbidities were similar across the years: age (2013: median = 53 years, range 20-92 years; 2014: 56, 21-83; 2015: 54, 20-81); preexisting lung disease (30%, 27%, 25% respectively); HIV positive status (9%, 7%, 17%). CRB-65 score was: low risk (0 points) = 70% in 2013, 66% in 2014, 75% in 2015; intermediate risk (1-2 points) = 30%, 34%, 25%; high risk (3-4 points) = 0% in all years. Percentage of patients discharged home with a documented prescription was 83%, 85%, and 94% respectively. In 2013, patients received azithromycin (AZM) (n = 17, 43% of antibiotic prescriptions that year); levofloxacin (LVX) (n = 10, 25%); AMC (n = 5, 13%); clarithromycin (CLR) (n = 5, 13%); trimethoprim-sulfamethoxazole (SXT) (n = 2, 5%); doxycycline (DOX) (n = 1, 3%). In 2014: AMC (n = 26, 51%); AZM (n = 12, 24%); LVX (n = 9, 18%); CLR (n = 2, 4%); DOX (n = 1, 2%); erythromycin (ERY) (n = 1, 2%). In 2015: AMC (n = 17, 47%); AZM (n = 12, 33%); LVX (n = 4, 11%); CLR (n = 1, 3%); SXT (n = 1, 3%); DOX (n = 1, 3%). Number of return ED visits within 2 weeks were: n = 16 (35%); n = 11 (19%); and n = 10 (28%) respectively. **Conclusion:** The results of this study show that there has been a change in antibiotic prescribing practices in the SMH ED since dissemination of the CAP guidelines, with AMC accounting for nearly half of antibiotic prescriptions. Further antimicrobial stewardship efforts will focus on evaluating factors influencing prescribing practices. **Keywords:** community-acquired pneumonia, quality improvement, antibiotic stewardship

LO069

Current management of pharyngitis in the emergency department: a retrospective multicenter observational study

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Introduction: Pharyngitis is a common presenting complaint at the emergency department (ED). Historically, acute pharyngitis has been overdiagnosed as the result of a bacterial etiology, leading to overprescription of antibiotics, and overuse of throat culturing. This study attempts to quantify the current management of acute pharyngitis in the ED, and compare to the theoretical management using a modified Centor score. **Methods:** This was a retrospective chart review of 1640 patients who presented to four EDs in the central zone of the Nova Scotia Health Authority that received a diagnosis of pharyngitis, bacterial pharyngitis or tonsillitis. The primary outcome was the observed rate of each diagnosis in the study population, the rate of antibiotic prescription, and the rate of throat swab cultures performed. The secondary outcomes were the rate of antibiotics and throat swabs ordered using a modified Centor score. Antibiotics as first-line treatment were indicated if the Centor score was three or greater, and throat cultures were indicated if the Centor score was two or greater. **Results:** A total of 1596 patients were included in the analysis. Antibiotics were given in 893 patients (0.559; 95% CI: {0.535, 0.584}). Cultures were sent on 863 patients (0.541 CI: {0.516, 0.565}). Using the modified Centor thresholds, we would have prescribed antibiotics as the first-line treatment in 77 cases (0.048 CI: {0.038, 0.060}), potentially saving 786 prescriptions, and ordered throat swabs on 502 patients

(0.315, CI: {0.292, 0.338}), saving 361 cultures. The most commonly prescribed antibiotic was penicillin, and the least prescribed was metronidazole. **Conclusion:** Over half of patients that present with acute pharyngitis receive an antibiotic, and over half have a throat swab culture performed. Utilizing a modified Centor score would result in decreased antibiotic prescription rate, and a diminished rate of throat cultures. Incorporation of these Centor criteria could result in diminished antibiotic prescription rates for acute pharyngitis in the ED.

Keywords: antibiotic, pharyngitis

LO071

Influenza and pneumococcal vaccinations in the emergency department

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Introduction: Influenza and pneumococcal disease are vaccine preventable diseases that account for significant morbidity and mortality in Canada. Influenza vaccination has been shown to reduce mortality and pneumococcal vaccination reduces invasive pneumococcal disease. Previous studies have shown that emergency department (ED) patients are often at high risk for influenza and pneumococcal disease and willing to be vaccinated during their ED stay. Our study set out to determine what proportion of adult patients in the ED qualify for and are willing to be vaccinated against influenza and pneumococcus during their ED visit. **Methods:** Our study used a convenience sample of patients presenting to the ED at a large Canadian tertiary care centre (Vancouver General Hospital). Inclusion criteria were: adult patients (19 years or greater); consenting to be screened for immunization status; and able to communicate in English. The exclusion criteria were: critically ill patients and patients in severe pain. The primary outcome was the proportion of patients presenting to the ED that could be immunized for influenza and pneumococcus (member of a high risk group, unvaccinated and willing to be vaccinated). Secondary outcomes included additional demographic characteristics and patient attitudes regarding vaccination. **Results:** We screened 413 patients of which 55 did not meet inclusion/exclusion criteria and 104 declined participation. A total of 254 patients completed the survey for a response rate of 71%. Our primary outcome was present in 20% of patients for influenza (high risk for complications, unvaccinated and willing to be vaccinated in the ED). For pneumococcus, 15% were at high risk, unvaccinated and willing to be vaccinated in the ED. In our population, 83% were at high risk of complications from influenza and 58% were at high risk of complications from pneumococcus. In total, 53% of patients would accept influenza vaccine and 44% would accept pneumococcal vaccine. **Conclusion:** Our study demonstrates that there is a significant high-risk population that is otherwise unreached and are willing to be vaccinated for influenza and pneumococcus in the ED. Our patient population has a very high prevalence of risk factors for complications of pneumonia and influenza. This data suggests that ED patients are a high-risk population and could be a target group for vaccination campaigns.

Keywords: influenza, pneumococcus, vaccination

LO072

Fever in the returning traveller: a systematic review and critical appraisal of existing clinical practice guidelines and approaches to returning travellers presenting with fever

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Introduction: Fever in the returning traveller is a common ED presentation; however approaches and level of comfort with tropical diseases vary widely. This project aimed to conduct a systematic review and critical appraisal of existing clinical practice guidelines and approaches, to guide an ED approach, in Canada, to fever in the returning traveller. **Methods:** A literature review was conducted of peer reviewed papers, national and international practice guidelines, and practice statements presenting approaches to fever in the returning traveller. A literature search was conducted using MEDLINE and Embase (1947-Dec 2014), with librarian assistance to optimize strategy. The databases of guideline clearing houses, CMA, PHAC, WHO, CDC, and the Cochrane library were searched, along with a google scholar search. References of included articles were hand searched. Article titles and abstracts were reviewed by the author for inclusion. Key elements of the guidelines and approaches were identified and grouped by theme and where appropriate, the quality of guidelines were assessed by two reviewers using the AGREEII tool. **Results:** The search returned 1598 titles. 72 full manuscripts were reviewed based on inclusion from title and abstract, with 24 manuscripts included for final analysis. Common elements suggested by the guidelines or approaches were identified and grouped within three themes (key historical features, physical exam findings, investigations). Most manuscripts presented tables of important clinical information, but limited guidance on how to approach diagnosis in a focused manner. When evaluated by AGREEII, only one guideline (D'Acremont et al) scored > 50% overall quality rating. Unlike other approaches, this guideline proposes a stepwise approach to diagnosis and treatment based on the presence of key exposures, signs/symptoms, and eosinophilia. **Conclusion:** The guideline by D'Acremont et al was identified as the most rigorous existing practice guideline. This guideline, combined with other elements identified by thematic review, forms the basis of a suggested ED approach to fever in the returning traveller, which will be further refined using the AGREEII model to propose a practice guideline for Canadian EDs.

Keywords: fever, returning traveller, AGREEII

LO073

Implementation of an ED atrial fibrillation and atrial flutter pathway decreases ED length of stay

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Introduction: Atrial fibrillation and flutter (AFF) are the most common arrhythmias presenting to the emergency department. A coordinated ED AFF electronic order-set and management pathway was developed in collaboration with cardiologists at our institution. The primary objective of this study was to compare the ED length of stay pre and post pathway implementation. Secondary objectives included comparison of the following outcomes pre and post-pathway (PRE & POST): AFF Clinic referral rates, ED return rates, and mortality. **Methods:** This was a retrospective case series of patients presenting to our quaternary care ED with AFF pre and post AFF pathway implementation. Cases were identified using an administrative database covering 120 000 annual ED visits. Trained research assistants and the primary investigator extracted data from the electronic medical record. 20% of all charts were double collected to ensure accuracy ($k = 0.85$). Descriptive variables were described using counts, means, medians and confidence intervals. Chi-square statistics of dependent samples were calculated for the primary

outcome. **Results:** We examined 307 cases of AFF presenting to our ED ($n = 130$ PRE; $n = 177$ POST). Demographic variables were similar PRE and POST: mean age (66.0 [95%CI 63.8-68.3] PRE; 65.0 [63.0-67.0] POST), % male (59.2% PRE; 59.3% POST), presenting rhythm (66.2% A.fib [58.0-74.3] A. flutter 29.2% [21.4-37.0] PRE; 61.0% A.fib [53.8-68.1] A. flutter 17.5% [11.9-23.1] POST), and CHADS2VASC score (2.1 [1.8-2.4] PRE; 1.9 [1.7-2.1] POST). The mean ED LOS decreased by 72.5 minutes (95% CI -22.9 to -122.1; $P < 0.001$). AFF clinic referral rates increased from 16.9% PRE to 25.4% POST (not significant). ED return rates within 30 days for AFF, CHF, major bleeding and CVA were unchanged. 30 day mortality rates were not statistically different (1.5% PRE vs. 2.8% POST). **Conclusion:** A coordinated ED AFF pathway was associated with a significant reduction in ED LOS without significant changes in ED return rates or mortality.

Keywords: atrial fibrillation, length of stay, emergency medicine

LO074

Point of care ultrasound for lung B-lines in the early diagnosis of acute decompensated heart failure in the emergency department: a systematic review

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Introduction: Dyspnea is a common presenting problem in the emergency department (ED) that frequently creates a diagnostic challenge for physicians. Acute decompensated heart failure (ADHF) represents a common cause that requires prompt diagnosis and management. Recent studies on dyspneic patients have suggested a potential role for point-of-care ultrasound (PoCUS). The objective of this systematic review was to assess the sensitivity and specificity of early bedside lung ultrasound in patients presenting to the ED with dyspnea. **Methods:** A search of the literature was conducted using PubMed, EMBASE, the Cochrane Library, bibliographies of previous systematic reviews, and abstracts from major emergency medicine conferences. We included prospective studies that assessed the diagnostic accuracy of B-lines from bedside lung ultrasound in the ED patients compared to a clinical diagnosis of ADHF at hospital discharge. The final diagnosis included at least one of CXR, computed tomography, or BNP. Two reviewers independently screened all titles and abstracts for possible inclusions. Two separate content experts full text-reviewed selected studies and performed quality analysis using a modified Critical Appraisal Skills Program (CASP) questionnaire. Extracted data was assessed with summary receiver operator characteristics curve (SROC) analysis with pooled sensitivity and specificity. Heterogeneity was tested. **Results:** The electronic search yielded 3674 articles of which six met the inclusion criteria and fulfilled CASP requirements for methodological quality. The total number of patients in these studies was 1911. Heterogeneity was noted; due to poorer performance by novice users. Meta-analysis of the data showed that in detecting ADHF, bedside lung ultrasound had a pooled sensitivity of 89.6% (95% CI 69.5 to 97.0%) and a pooled specificity of 88.4% (95% CI 75.0 to 95.1%). The positive likelihood ratio was 6.01 (95% CI 2.93 to 12.32) and negative likelihood ratio was 0.13 (95% CI 0.06 to 0.30). **Conclusion:** This study suggests that in patients presenting to the ED with undifferentiated dyspnea, early point of care lung ultrasound may be used to confirm the diagnosis of ADHF, which may facilitate earlier appropriate management. Test performance may vary according to experience.

Keywords: point-of-care ultrasound (PoCUS), B-Lines, heart failure