

P055**Quality assessment and improvement evaluation of return visits to the emergency department for ultrasound**

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Introduction: Depending on the time and day of initial Emergency Department (ED) presentation, some patients may require a return to the ED the following day for ultrasound examination. Return visits for ultrasound may be time and resource intensive for both patients and the ED. Qualitative experience suggests that a percentage of return ultrasounds could be performed at a non-ED facility. Our objective was to undertake a retrospective audit of return for ultrasound usage, patterns and outcomes at 2 academic EDs. **Methods:** A retrospective review of all adult patients returning to the ED for ultrasound at both LHSC ED sites in 2016 was undertaken. Each chart was independently reviewed by two emergency medicine consultants. Charts were assessed for day and time of initial presentation and return, type of ultrasound ordered, and length of ED stay on initial presentation and return visit. Opinion based questions were considered by reviewers, including urgency of diagnosis clarification required, if symptoms were still present on return, and if any medical or surgical treatment or follow up was arranged based on ultrasound results. Agreement between reviewers was assessed. **Results:** After eliminating charts for which the return visit was not for a scheduled ultrasound examination, 328 patient charts were reviewed. 63% of patients were female and median [IQR] age was 40 years [27-56]. Abdomen/pelvis represented 50% of the ultrasounds; renal 24%; venous Doppler 15.9%. Symptoms were still present and documented in 79% of cases. 22% of cases required a medical intervention and 9% an immediate surgical intervention. 11% of patients were admitted to hospital on their return visit. Outpatient follow-up based on US results was initiated in 29% of cases. Median [IQR] combined LOS was 479.5 minutes [358.5-621.75]. Agreement between reviewers for opinion based questions was poor (63%-96%). **Conclusion:** Ideally, formal ultrasound should be available on a 24 hour basis for ED patients in order to avoid return visits. A percentage of return for ultrasound examinations do not result in any significant change in treatment. Emergency departments should consider the development of pathways to avoid return visits for follow up ultrasound when possible. The low incidence of surgical treatment in those returning for US suggests that this population could be served in a non-hospital setting. Further research is required to support this conclusion.

Keywords: quality assessment, ultrasound

P056**Is lumbar puncture mandatory in the workup of infants 22 to 60 days old presenting to the emergency department with a fever without a source?**

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Introduction: Fever is a common presenting complaint in the emergency department (ED). Febrile infants are at particularly high risk of serious bacterial infection including bacterial meningitis. Unfortunately, recommendations as to when to perform a lumbar puncture in febrile infants older than 21 days remain conflicting. Our study

seeks to establish the prevalence of bacterial meningitis in infants 22 to 60 days old and to evaluate the performance of our local fever without a source (FWS) workup protocol at identifying bacterial meningitis. **Methods:** This analysis represents the results of a retrospective cohort study which took place in an academic pediatric ED in Quebec City. Infants 22 to 60 days old investigated for FWS, were included in the study. Premature infants (<37 weeks), as well as infants with chronic diseases, immunodeficiency, previous antimicrobial therapy, in-dwelling catheters, or septic shock were excluded. We evaluated the performance of our local FWS workup protocol which includes the Yale Scale, a complete blood count, blood culture, C-reactive protein, urinalysis and urine culture. The protocol recommends a lumbar puncture in all febrile infants <1 month old, and in all infants <3 months old with either leukocytes <5.0 or >15.0 X 10⁹cells/L, petechia, or a Yale between 11 and 16. **Results:** We reviewed 1261 charts from 2012 to 2017, of which 920 met our inclusion criteria. In our cohort, 171 infants were 22 to 30 days old, 369 were 31 to 45 days old, and 380 were 46 to 60 days old. The proportion of infants with cerebrospinal fluid analysis in these 3 groups was 76% (n = 130), 25% (n = 98) and 12% (n = 46) respectively. In the entire cohort, two infants were diagnosed with bacterial meningitis resulting in a prevalence of 0.2% (95%CI: 0-0.5%); viral meningitis had a prevalence of 4.7% (95%CI: 3.3-6.1%). Sensitivity and specificity of the protocol were 100% and 52.8%; positive and negative predictive values were 0.4% and 100%, respectively. All charts were reviewed for 2 weeks following the index visit to screen for missed cases of bacterial meningitis. **Conclusion:** Systematically performing a lumbar puncture for workup of fever without a source in infants 22 to 60 days old appears unwarranted given the low prevalence of bacterial meningitis in this population. Our FWS workup protocol correctly identified the 2 cases of bacterial meningitis in our cohort. This is an ongoing study and more cases will be recruited to better evaluate the safety and performance of our protocol.

Keywords: fever without a source, infants 22 to 60 days old, lumbar puncture

P057**Evidence-based medicine (EBM) simulation: teaching real-time literature searching to emergency medicine residents using a flipped classroom and high-fidelity simulation**

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Innovation Concept: Evidence-based medicine (EBM), including literature search skills, is an objective of the Emergency Medicine (EM) residency curriculum. Traditional teaching of this topic utilized a classroom-based, librarian-lead session that presented an overview of many search engines. Feedback from past sessions indicated that learners retained little after the session. To be effective, EBM needs to be brought to the bedside. We created a session to engage EM residents and improve their efficiency in literature searching during an EM shift. **Methods:** We conducted a needs assessment among EM residents in our program. In response to this and to maximize impact of teaching, we created an EBM workshop on literature searching that used a flipped classroom approach and high-fidelity simulation. The session was designed for a small group (12 junior residents), with the goals of being interactive, engaging and practice-relevant. Feedback was collected on the simulation experience. **Curriculum, Tool or Material:** With a librarian, we created a brief list of EM-relevant databases. It included tips for searching and links to the corresponding