closed thoracic injuries are often discharged from Emergency Departments (ED) and treated on an outpatient basis. One potential complication is the development of a delayed hemothorax (DHx). Currently, there exists no consensus on the best method for classifying DHx. The goal of this study is to evaluate the level of interrater and intrarater agreement with respect to three classification schemes for DHx. **Methods:** This was a secondary analysis drawn from a prospective multicenter cohort study of consecutive patients presenting to one of four Canadian ED for minor closed thoracic trauma over a four-year period. Using intraclass correlation (ICC), chest radiographs of 50 patients previously diagnosed with new DHx within 2 weeks of discharge were randomly selected and subjected to analysis by emergency physicians, radiologists, surgeons and family physicians using three different methods of classification to study their reliability, both between raters and for the same rater on two separate evaluations, at determining hemothorax severity. **Results:** Analysis of ICC values demonstrates poor interrater agreement (Global ICC 0.44, 0.35-0.52) for the current classification method, based on professional experience and opinion. The second method, based on hemothorax / total thorax ratio calculation, showed good Global ICC (0.58, 0.49-0.67) on lateral films. The third method, based on presence / absence of overflow from the costo-phrenic angle, showed equally good Global ICC (0.56, 0.47-0.64) on postero-anterior films and was more homogenous across the four different groups of physicians. **Conclusion:** Our results demonstrate that the current method used to classify DHx, based on gestalt, shows poor interrater agreement. Two innovative classification methods achieved good interrater agreement. Future studies, analyzing possible correlation of this more reliable classification method to objective, clinical measures would be of value to management decisions.
Keywords: delayed hemothorax, minor chest trauma, classification

P041

Accuracy of medical student-performed point-of-care ultrasound in the diagnosis of distal radius fractures in adults
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Introduction: Previous investigations of the diagnostic accuracy of point-of-care ultrasound (POCUS) in distal radius fractures (DRF) report a wide range of sensitivities (71%-98%) and specificities (73%-100%) when performed by medical professionals, which may reflect inconsistencies in POCUS training or sonographer experience. The purpose of this study was to determine the accuracy of POCUS performed by pre-clerkship medical students with minimal POCUS training compared to standard radiography in diagnosing DRF in adult patients with traumatic wrist injuries, in order to assess POCUS as an alternative to traditional radiographic imaging. **Methods:** This prospective observational study was conducted from June to September 2015. The study population consisted of adults presenting to the emergency department (ED) with distal forearm pain secondary to traumatic injury within the past seven days and for whom radiographic imaging was ordered. Patients were evaluated using POCUS performed by medical students with no prior experience who had received one hour of POCUS training taught by an emergency ultrasound fellowship-trained ED physician. A pre-test probability of fracture was stratified as low or high and documented independently by the treating physician. Students were blinded to pre-test probability and radiography results. **Results:** Of the 52 patients enrolled, 18 had DRF diagnosed by radiographic imaging. Compared to radiography, student-performed POCUS had 72% overall sensitivity (95% CI, 47%-90%) and 85% specificity (95% CI, 69%-95%), with 81% overall accuracy. In the high pre-test probability group (N = 20), POCUS had 80% sensitivity (95% CI, 52%-96%) and 60% specificity (95% CI, 15%-95%). In the low pre-test probability group (N = 32), POCUS had 33% sensitivity (95% CI, 1%-91%) and 90% specificity (95% CI, 73%-98%). **Conclusion:** POCUS performed by medical students demonstrated reasonable success in diagnosing DRF, with overall sensitivity and specificity in keeping with published data. Within the low pre-test probability group, the diagnostic accuracy of POCUS suggests that ultrasound was an unreliable alternative to radiographic imaging for DRF in this cohort. Future analysis of the factors leading to DRF missed by POCUS as being related to adequacy of POCUS training, image capture, or sonographer experience will further explore the utility of POCUS as a diagnostic alternative.
Keywords: point-of-care ultrasound (PoCUS), diagnostic accuracy, distal radius

P042

Use of technology to create economically sustainable supplemented triage: a feasibility study at an urban tertiary care centre
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Introduction: Decreasing patient Length of Stay (LOS) in the Emergency Department (ED) improves patient safety. Numerous studies have taken differing approaches to supplementing care at triage in order to decrease LOS, however, have not proven to be financially sustainable. The goal of this study was to explore financially viable options to expedite care in a safe way and reduce patient LOS. **Methods:** The ED process chain was identified. Two reviewers observed triage for a 4-hour period following patients. Times from patient arrival to: completion of triage, completion of registration, test ordering, physician assessment and final disposition were measured. Results were presented at departmental rounds. Nursing staff, Physician Assistants, Residents and Physician staff were paired in interdisciplinary groups to brainstorm and trial approaches to expedited test ordering and use of technology to carry out orders. **Results:** Triage interruptions increased time to triage a patient up to 3 times baseline, and 33% of triage interactions were interrupted. A bottleneck occurred at registration, increasing time to be registered by up to 30 minutes. Also, registration is using antiquated technology, significantly increasing registration time. Average patient LOS was 249 min, but was only 120 min if there was no delay in test ordering for patients. Average time for MD disposition was 129 min, but was only 47 minutes if there was no delay in ordering tests. Brainstorming lead to the following ideas: 1) use of companion phones to access already-working ED MD for test ordering and ECG interpretation 2) the use of the computer system to flag new orders or ECG for triage patients 3) use of a dedicated iPad in zones 4) increased standing orders for RNs to order diagnostic imaging. **Conclusion:** Patient LOS was reduced by lack of delay in test ordering, in keeping with previous studies. Numerous points in the process chain were identified for creating an economically sustainable supplemented triage to improve patient flow. These were: interruptions to triage, registration bottleneck, technology at registration, test ordering at triage. Ways in which to effectively order tests at triage include: MD-companion phones, pre-existing computer program, dedicated iPad in zones. The next step in this study is to trial each of these low-cost technologies.
Keywords: supplemental triage, technology, economic feasibility

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Education innovation: a postgraduate emergency medicine musculoskeletal medicine curriculum