identify the pulse using US compared to 9 (10%) by MP (P = 0.81). Prior to training, participants had a higher comfort level using MP than US pulse checks (67 vs. 26 mm, P < 0.001). Following the study, participants reported higher comfort levels using US than MP (88 vs. 78 mm, P < 0.001). **Conclusion:** Carotid pulse detection in live subjects was not slower using US as compared to MP in this study. A brief teaching session was sufficient to improve confidence of carotid pulse identification even in those with little to no previous US training. The preliminary results from this study provide the groundwork for larger studies to evaluate this pulse check method for patients in actual cardiac arrest.

**Keywords:** ultrasound, pulse, palpation

## LO79

**Climbing the learning curve teaching the pediatric emergency physician how to interpret point-of-care ultrasound images**

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**Introduction:** Point-of-Care Ultrasound (POCUS) is rapidly being integrated into Pediatric Emergency Medicine (PEM), and image interpretation is an important component of this skill. Currently, PEM physicians often rely on case-by-case exposure and feedback by a POCUS expert physician to learn this skill; however, this may not be efficient, reliable or feasible. Thus, there is a pressing need to develop effective POCUS image interpretation learning and assessment tools. We developed an on-line learning platform that allowed for the deliberate practice of images in four POCUS applications [soft tissue, lung, cardiac and Focused Assessment Sonography for Trauma (FAST)], and determined the quantity of participant skill acquisition by deriving performance metrics and learning curves. **Methods:** This was a prospective cross-sectional study administered via an on-line learning and measurement platform. Images were acquired from a pediatric emergency department and each POCUS application contained 100 still/ video images. Final diagnosis of each image was determined via the consensus of three PEM POCUS experts. PEM fellow and attending study participants were recruited from the USA and Canada and were required to complete the cases of at least one application. We aimed to enroll 200 participants who had to complete a minimum of 100 cases which, based on prior work, would provide sufficient raters for item analyses and comparisons between PEM attendings and fellows. To derive reference standard performance metrics and to validate image interpretations, a unique set of five PEM POCUS experts completed each application. **Results:** We enrolled 225 PEM physicians, 74 fellows and 151 attendings. For all applications, the Cohens d effect size was large at 0.87, and there was no difference between PEM attendings and fellows with respect to summary performance metrics (accuracy, p = 0.29; sensitivity, p = 0.13; specificity, p = 0.92). Final accuracy soft tissue, lung, cardiac, and FAST for all participants was 86.4%, 89.6%, 81.6%, 88.0%, respectively, and the corresponding accuracy of PEM POCUS experts for each application was 96.0%, 96.0%, 90.0%, and 93.0%. Learning curves show maximal learning gains (inflection point) up until 65 cases for soft tissue, 70 for FAST, 75 for lung, and 85 for cardiac. **Conclusion:** Deliberate practice of POCUS image interpretation was effective for ensuring broad domain coverage and predictable skill improvement. Specifically, there was a large learning effect after 100 case interpretations, and 65-85 case interpretations were needed to reach an accuracy threshold of approximately 85%.

**Keywords:** medical education, diagnosis, learning

## LO80

**Ondansetron administration to non-dehydrated children with acute gastroenteritis-associated vomiting, in emergency departments in Pakistan: a randomized, blinded, phase 3, superiority trial**

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**Introduction:** In high-income countries, vomiting often impedes oral rehydration therapy, leading to intravenous rehydration fluid administration to children with acute gastroenteritis. Ondansetron administration reduces vomiting and intravenous fluid administration in this population. We evaluated whether ondansetron is similarly effective when employed in Pakistan. **Methods:** In this 2-hospital, double-blind, placebo-controlled, emergency department-based, randomized trial, we recruited children aged 0·5 to 5·0 years, without dehydration, who had diarrhea and 1 episode of vomiting within 4 hours of arrival. Patients were randomly assigned (1:1), via an internet-based randomization service, using a stratified, variable block randomization scheme, to receive a single dose of oral ondansetron or placebo. The primary endpoint was intravenous rehydration (administration of 20 ml/kg over 4 hours of an isotonic fluid) within 72 hours of randomization. All randomized children were analysed. **Results:** From July 3, 2014, to January 12, 2017, 626 children were randomized. Intravenous rehydration was provided to 10.8% (34/314) and 10.3% (27/312) of children administered placebo and ondansetron, respectively (OR: 0.946; 95% CI: 0.564, 1.587; P = 0.834). A regression model fitted with treatment group and adjusted for antiemetic administration and vomiting frequency in the preceding 24 hours, yielded similar results; OR = 0.952; 95% CI: 0.570, 1.589; P = 0.850. There was no evidence of interaction between treatment group and age (P = 0.974), 3 diarrheal stools in the preceding 24 hours (P = 0.983) or 3 vomits in the preceding 24 hours (P = 0.554). During the 4-hour study observation period, 24.0% (75/314) and 19.6% (61/312) of children in the placebo and ondansetron groups vomited, respectively; OR: 0.774; 95% CI: 0.528, 1.133; P = 0.187. **Conclusion:** Ondansetron administration did not significantly reduce intravenous rehydration use, suggesting that in children without dehydration, ondansetron administration does not significantly alter the disease course and should not be administered to this group of children.

**Keywords:** ondansetron, vomiting, gastroenteritis

## LO81

**Bridging the GAP: A deliberate practice method for learning genital abnormalities in prepubescent girls**

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**Introduction:** Correctly identifying pathology in pre-pubertal females is a high-stakes physical examination skill. Currently, learning this skill relies heavily on case-by-case exposure, which is variable, limited and often results in suboptimal skill. Thus, there is a need to develop and evaluate learning platforms that simulate the presentation and diagnosis of this important clinical task. We developed an on-line learning and assessment platform that allowed the deliberate practice of 158 pre-pubertal female genital image interpretations . We examined the quantity of skill acquisition by deriving performance metrics and learning curves. **Methods:** This was a prospective cross-sectional study administered via an on-line learning and assessment platform. Colposcopic images were acquired from a child abuse clinic. Two child abuse experts