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Background: TeleHealth is an emerging field and has few large population studies published to date.

Objectives: Our objective was to describe a cohort of a large, mature TelEmergency (TE) program.

Methods: Consults from an academic TE program consisting of 14 remote rural sites were recorded by the emergency medicine physician in real time via paper log and later incorporated into an electronic database. Demographics, diagnosis, and disposition were required documentation for all patients, while past medical history (PMH) details were abstracted when available. All patients with a documented consult from March 2011 to March 2014 were included. Diagnoses were categorized into ontologies for comparison. Demographics, dispositions, and ontologies were characterized as a whole. TE consults were then categorized by disposition, and demographics, PMH, and ontologies were compared between the subgroups. x^2 and Fisher exact tests were used as appropriate with $p < 0.05$ considered statistically significant.

Results: 4,188 TE consults were included in this analysis. The median age was 50 years, 44% were African American, and 55% were Caucasian. 41% of patients were discharged to home, 34% transferred to another facility, and 23% admitted locally. The top 4 ontologies prompting a consult were chest pain (11%), blunt trauma (7%), abdominal pain (6%), and syncope (4%). PMH was available on 1,449 patients. Of those, 24% had HTN, 16% DM, 13% CAD, 9% CHF, 8% COPD, 7% malignancy, 6% CVA and 6% MI. Admitted patients were older (median age 64 years) than those discharged to home (median age 36 years) or transferred to another facility (median age 53 years, $p = 0.0001$). Admitted patients were more often female (55%), while patients who died in the ED or left against medical advice were more often male (64% and 55%, respectively, $p = 0.003$). Admitted patients more often had a PMH of COPD ($p = 0.001$), while transferred patients more often had a PMH of CVA ($p = 0.0002$). Few patients with PMH of CAD, MI or CHF were discharged ($p = 0.002$). Chest pain was the top ontology in all subgroups.

Conclusion: In a mature TE program, the most common ontologies prompting consultation were chest pain, blunt trauma, and abdominal pain with many patients requiring admission or transfer. These data may be useful to programs attempting to determine staffing for a Tele-emergency program.

87 Is Ultrasound Non-Inferior to Computed Tomography for Pediatric Appendicitis?

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Background: Appendicitis is the most common pediatric surgical emergency. The diagnosis is most commonly made by computed tomography (CT) or ultrasound (U/S). CT radiation-induced malignancy concerns warrant further evaluation of U/S as the first-line diagnostic modality for suspected appendicitis.

Objectives: We evaluated the accuracy of U/S compared to CT for the diagnosis of pediatric appendicitis in a 21-hospital system.

Methods: We conducted a retrospective study of all patients age 2-17 years seen in the ED who underwent non-incidental appendectomies from 2006 2015, and analyzed ED imaging use, patient characteristics and surgical outcomes. We compared negative appendectomy rates (NAR) for CT and U/S, using a 3% non-inferiority margin between CT and U/S groups. We performed six non-inferiority tests: among the full cohort; among all males and all females; and among subjects aged 2-5 years, 6-10 years and 11-17 years. Our alpha for each one-sided test was p=0.008, correcting for multiple comparisons (0.05/6=0.008). Patients with no imaging and those undergoing U/S followed by CT were excluded from analysis to minimize confounding by imaging indication.

Results: Of 6169 subjects, CT alone was performed in 30.4% (1873) and U/S alone in 29.7% (1832). The NAR was 4.9% (92) for CT and 7.2% (132) for U/S. Patients undergoing no imaging (26.6%; 1644) and those having both U/S and CT (13.4%; 829) had NARs of 4.3% (70) and 7.8% (64) respectively. Among male patients U/S was non-inferior to CT (NAR 5.1% vs 4.7%, p=0.003). U/S did not achieve non-inferiority to CT among all patients (p=0.19), among females (10.2% vs 5.3%, p=0.92), or in the age groups (2-5 years [16.6% vs. 5.3%, p=0.95], 6-10 years [6.4% vs 4.7%, p=0.18], or 11-17 years [6.5% vs 4.9%, p=0.07]).

Conclusion: In our analysis, U/S was non-inferior to CT for negative appendectomy among male pediatric patients, further supporting the first-line use of U/S in age and gender stratified diagnostic pathways for suspected appendicitis. Among females, imaging decisions for suspected appendicitis should balance the risks of negative appendectomy against those of radiation-induced malignancy.

88 The Outcome Predictive Power of Focused Echocardiography in Cardiopulmonary Resuscitation: A Meta-Analysis

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Background: The AHA 2015 guidelines for CPR and ECC recognized the potential benefits of focused transthoracic echocardiography to diagnose potentially reversible causes of cardiac arrest. The diagnostic information provided by echocardiography may be utilized to predict the resuscitation outcomes of patients with cardiac arrest.

Objectives: We conducted a meta-analysis to summarize the evidence regarding the accuracy of focused transthoracic echocardiography to predict outcomes in patients who have sustained cardiac arrest.

Methods: The MEDLINE, EMBASE and the Cochrane Library databases were searched for studies published from inception to October 2015. The medical subject heading (MeSH) and text words for the term "echocardiography" were combined with the MeSH term "cardiopulmonary resuscitation". Exclusion criteria included reviews, letters, editorials, case reports, comments, and animal studies. Two reviewers extracted and verified the data independently. Using a bivariate meta-analysis model with a 95% confidence interval (CI), we calculated the pooled sensitivity, specificity, positive and negative likelihood ratios of focused transthoracic echocardiography to predict Return of Spontaneous Circulation (ROSC), survival to hospital admission, and survival to hospital discharge.

Results: Out of 835 articles identified, 20 studies met the inclusion criteria for further review, and 15 studies contained sufficient data extractable for outcome prediction. The pooled sensitivity, specificity, and positive and negative likelihood ratios were 0.95 (95% CI: 0.68-0.99), 0.77 (95% CI: 0.59-0.88), 4.1 (95% CI: 2.2-7.7) and 0.06 (95% CI: 0.01-0.51) for prediction of ROSC in 9 studies; 0.78 (95% CI: 0.62-0.88), 0.74 (95% CI: 0.62-0.84), 3.0 (95% CI: 2.0-4.7) and 0.30 (95% CI: 0.16-0.54) for prediction of survival to hospital admission in 6 studies; and 0.78 (95% CI: 0.48-0.93), 0.68 (95% CI: 0.44-0.85), 2.4 (95% CI: 1.4-4.3) and 0.33 (95% CI: 0.13-0.81) for prediction of survival to hospital discharge in 5 studies.

Conclusion: Echocardiography should not be utilized independently to predict patient outcome given its poor to moderate positive likelihood ratio. The significantly low negative likelihood ratio in the outcomes across our study groups may help determine response to resuscitation and may assist with appropriate allocation of resuscitation resources.