The EM journals list were adopted from the 2017 Journal Citation Reports. Publications with first author affiliated with EDs were classified according to publishing journal (EM or non-EM journal). Countries with annual publication numbers less than 12 in 2018 were excluded. The slope (β) of linear regression was used to assess the trend of publication numbers and the 95% confidence intervals of the publication trend (β) were calculated. The correlation between the 2009 publication numbers and the trend of publication between 2009 and 2018 was measured by Pearson correlation coefficient (r).

Results: We identified 34,408 publications affiliated with first authors from EDs in 20 countries. The number of publications in both EM and non-EM journals showed an increasing trend in most countries. The trend between 2009 to 2018 in EM journal and non-EM journal of the 20 countries were plotted in Figure 1. 15 out of 20 countries had a greater increasing rate in non-EM journal than in EM journal. Among these 20 countries, the United States is the leading country of increasing rate in EM and non-EM journals. The leading five countries in EM journals were followed by Canada, South Korea, Australia, and Poland; in non-EM journals were followed by China, South Korea, Turkey, and Canada. In total publication number trends, the leading 5 countries were the United States, China, South Korea, Canada, Turkey. The 2009 publication numbers were positively correlated with the publication increasing rate between 2009 and 2018 in both of EM and non-EM journal (r = 0.853 in EM journals; 0.905 in non-EM journals, all p < 0.001).

Conclusion: This study confirmed that EM is a continuous growing specialty worldwide and identified the leading countries from the perspective of scientific publications. The leading countries' research capacity are not only in EM field but also been accepted and acknowledged by other medical specialties. The publication numbers may predict the publication trend in the following 10 years.

Figure. 2009-2018. EM (x-axis) vs Non EM (y-axis). Legend: Australia, Canada, China, Hong Kong, India, Iran, Ireland, Israel, New Zealand, Poland, Saudi Arabia, Singapore, South Africa, South Korea, Sweden, Taiwan, The Netherlands, Turkey, United Kingdom, United States.
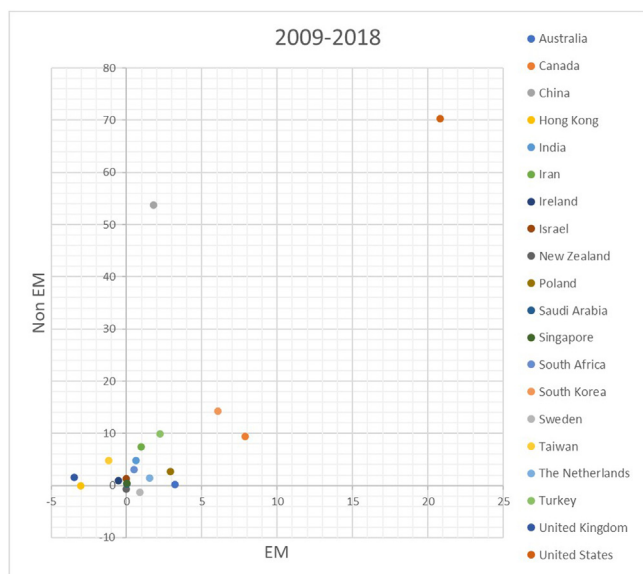
320 Post Cardiac Arrest Care: Does Usual Care Comply With Guidelines and Impact Outcomes?

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Study Objective: Guideline-based post-arrest care includes efforts to determine and treat the cause of arrest while minimizing cardiac dysfunction and brain injury resulting from lack of perfusion. Diagnostic testing such as early head imaging, electrocardiogram and other imaging studies may help determine the etiology of arrest. Mitigating injury to brain and heart involves maintaining adequate blood pressure, targeted temperature management (TTM) and early diagnosis and treatment of seizures with electroencephalogram (EEG). Our institution created a set of evidence-based guidelines for the management of post-arrest patients which, in addition to the above, also recommends early consultation with the neurocritical care service and an early echocardiogram. We aim to examine compliance with the guidelines in a cohort of survivors of out-of-hospital cardiac arrest (OHCA) and related outcomes.

Methods: Retrospective cohort study of patients with OHCA at two urban emergency departments (ED) within a health system between 7/2016 and 7/2018. Exclusion criteria included age < 18 years old and if CPR was terminated upon arrival. Data were extracted from an internal institutional quality improvement database maintained of all resuscitative measures. We abstracted demographic data, Utstein criteria (rhythm, bystander CPR) and time of arrest (day vs night). Quality measures included NCC consultation, cEEG, and computed tomography (CT) of the brain within 6 hours of admission. Descriptive statistics are provided as indicated. Chi-squared and two-sided t tests were used to determine differences in univariate analysis. An alpha < 0.05 was used for statistical significance.

Results: 124 patients presented with OHCA, of which 41 (33.0%) were comatose and survived to admission. Nearly 83% (34/41 patients) of these patients received guideline-recommended TTM:, 15 were targeted to low temperature (34 C) and 19 targeted to higher temperature (35 C). Seventeen patients of 41 (41.4%) received an early head CT in the ED, 17/41 (41.4%) patients were placed on cEEG and 23/41 (56.1%) patients received a NCC consult. Five of these comatose 43 patients (11.6 %) survived to discharge. The presence of a shockable rhythm was associated with a higher likelihood of receiving TTM (p= 0.005), and also higher rates of survival to discharge (p= 0.025). No significant differences were seen in the initiation of TTM when comparing demographics and Utstein criteria, and variation in temperature goal did not affect survival to discharge. Seventeen patients received an early head CT, 17 patients were placed on cEEG and 23 patients received a NCC consult. 5 patients (12 %) survived to discharge. Of these quality processes, only initiation of TTM was associated with survival to hospital discharge. No significant differences were seen in the initiation of TTM when comparing demographics and Utstein criteria, and variation in temperature goal did not affect survival to discharge.

Conclusions: While four out of five survivors of OHCA received TTM, compliance with the other recommendations for the post arrest algorithm was variable. Presence of a shockable rhythm was most associated with TTM compliance and was the strongest predictor of survival to hospital discharge. Further studies are needed to investigate whether better outcomes will result from improving usual care to include compliance with the guidelines.

321 Prevalence of SARS-CoV-2 Antibodies in Pediatric Health Care Workers in Atlanta, Georgia

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Background: The prevalence of antibodies to SARS-CoV-2 in pediatric health care workers (HCWs) in areas with high rates of COVID-19 infection is unknown. Working at the front line, emergency department (ED) HCWs are uniquely at high risk. It is unknown if seropositivity in this population is similar to community levels or is substantially higher as a result of work-based exposure to infectious children who may demonstrate mild symptoms. Further, the experience of pediatric HCWs may be disparate from adult focused facilities because prior to implementation of social distancing, children presented for care at pediatric facilities in high numbers with mild illness. Many were evaluated in pediatric EDs which may have put pediatric HCWs at higher risk during the COVID-19 pandemic before universal personal protective equipment (PPE) utilization became standard practice. The milder nature of COVID-19 in children has also led some to believe that children are not affected, although the emergence of multisystem inflammatory syndrome in children (MIS-C) refutes this notion. However, this belief and the lack of data may result in lax utilization to PPE in pediatric settings. Data describing seropositivity among pediatric HCWs is not yet available.

Study Objective: Determine the prevalence of IgG antibodies to SARS-CoV-2 in pediatric HCWs.

Methods: We performed a cross-sectional study, analyzing data from the baseline visit of a prospective cohort to determine the prevalence of IgG antibodies to SARS-CoV-2 in HCWs at a large pediatric health care facility in April-May 2020. Prior SARS-CoV-2 testing history, potential risk factors and level of anxiety about COVID-19 was determined. Symptomatic or febrile HCWs were excluded. Metrics were analyzed overall and by HCW roles and tested for differences using chi-square

estimates of independence. Prevalence of IgG antibodies were compared in ED vs. non-ED HCWs.

Results: Of 300 HCWs enrolled from April 16-May 18, 2020, their mean age range is 41-50 years, 83% are female and 75% have no comorbidities. HCWs include 33% physicians, 25% nurses 10% respiratory therapists, 7% advance practice providers, and 25% other. Forty-seven percent were emergency department (ED) staff, 13% worked in pediatric intensive care, 40% elsewhere. Half of all HCWs had children in their home, 45% had traveled outside the state, and 47% reported an illness since January. Overall, 28% had a known COVID-19+ exposure. Most participants (90%) believed they were at high risk to develop COVID-19 as HCWs, and 70% reported high anxiety due to the pandemic. The prevalence of SARS-CoV-2 IgG antibody positivity in this cohort is 4.7%. Of the 14 HCWs with positive serology, only 3 (21%) had a history of any prior COVID-19 testing, all of which were positive; 43% (6/14) had no prior flu-like illness or symptoms. Eighty-six percent of antibody-positive HCWs were ED-based staff; SARS-CoV-2 IgG antibodies were identified in 9% of ED HCWs enrolled compared to 1% in non-ED based HCWs, p=0.003.

Conclusions: Overall prevalence of SARS-CoV-2 IgG antibodies is low in pediatric HCWs living in a region with high COVID-19 activity. Most cases were found in HCWs from the pediatric ED, and nearly half were asymptomatic. ED-based pediatric HCWs may be uniquely at higher risk of exposure to children with COVID-19, and particularly may have been at higher risk of infection before awareness of the evolving pandemic; ongoing universal PPE utilization is essential.

322 Hyperglycemia Management Prior to Admission in an Urban Emergency Department

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Study Objectives: The aim of this quality improvement project was to decrease the percentage of ED patients admitted with a blood glucose (BG) >250 mg/dL to <20% in order to reduce mortality and length of stay.

Methods: Currently no consensus exists on the management of hyperglycemia in patients who are being admitted from the ED when not in hyperglycemia crisis. Considering nine out of ten hospitals report some degree of boarding, the need for hyperglycemia management while patients are in the ED is crucial. A workgroup comprised of emergency physicians, pharmacists, and endocrinologists collaborated to standardize the management of hyperglycemia in the ED. Outcome measures for this project include percentage of patients admitted with BG >250 mg/dL, average BG reduction, hospital and ED length of stay, in-hospital mortality, and rate of in-hospital diabetic ketoacidosis (DKA) or hyperosmolar hyperglycemic syndrome (HHS). The process measure is the percentage of times a pharmacist or student pharmacists intervenes on a patient with hyperglycemia. This process measure will determine if the EHR report was effective in capturing patients for the pharmacist to monitor and recommend treatment when needed. The balancing measure is hypoglycemia defined by any BG <70 mg/dL. Multiple Plan-Do-Study-Act cycles were implemented including education, development of an electronic health record (EHR) report to identify and monitor patients with BG >200 mg/dL, and development of an ED-specific insulin order and protocol.

Results: The quality improvement initiative was completed from June 2019 and continued through February 2020. Baseline data from February 2019 to June 2019 revealed that 74% of patients with an initially elevated BG >250 mg/dL were admitted with a BG above 250 mg/dL. Following the initiative, 49.2% of patients were admitted with a BG above 250 mg/dL, resulting in a reduction of 24.8%. The average admission BG was reduced by 65.8 mg/dL (92.9 vs 158.7 mg/dL, reduction range: 89.4-112.4 vs 131.7-220.6 mg/dL), creating a shift towards improved average BG beginning in August 2019. No difference was seen in hospital mortality, hospital LOS, ED LOS, hypoglycemia, or in-hospital DKA or HHS. After the EHR report was released, pharmacists intervened on 42% of patients with hyperglycemia in the ED with the majority including a recommended BG check.

Conclusion: Implementation of a standardized hyperglycemia treatment protocol along with pharmacist interventions reduced average admission BG and the percentage of patients with BG >250 mg/dL on admission. Future steps will include

implementation of pharmacist-driven point-of-care BG checks and the addition of insulin sliding scale orders to ED workflow.

323 Selected Septic Patients Can Be Safely Discharged from the Emergency Department

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Study Objectives: "Septic" patients (pts), as classically defined, have at least 2 Systemic Inflammatory Response Syndrome (SIRS) criteria + an infectious diagnosis (inf dx). Some septic pts are deliberately "treated and released" (Tx/Rel) from an Emergency Department (ED), probably based upon "physician gestalt." Prior peer-reviewed studies of septic pts' outcomes have been limited to hospitalized pts; mostly those in an Intensive Care Unit (ICU). Thus, no peer-reviewed literature exists to provide clinical or medicolegal support for any ED "Tx/Rel" strategy, when applied to septic pts. We tested the primary hypothesis that the 95% CI for 7-day (d) mortality (7dMort) & 30d mortality (30dMort) of septic pts Tx/Rel from the ED with an inf dx of Pneumonia (PNEU), Cellulitis or Abscess (SKIN), or UTI or Pyelonephritis (PYELO) includes 0%.

Methods: We performed an 18 mo retrospective study of adults in an urban ED with an annual volume exceeding 80,000 pts. Secondary hypotheses were that short-term outcomes (STO) of 72hr & 30d ED returns related to the first ED visit, and the STO of 7d & 30d ED returns that result in hospital admission, also are very rare events for this pt cohort. Searching the Social Security Death Index (SSDI) confirmed lack of 7dMort or 30dMort. Age, vital signs, chief complaint, white blood cell count & discharge diagnosis data were collected. SIRS scores at least 2 plus a dx of PNEU, UTI, PYELO or SKIN identified the septic group studied. SIRS, not qSOFA defined the septic group; qSOFA score is an ICU-validated PROGNOSTIC tool. A valid PROGNOSTIC tool requires all pts to have a correct dx upon study entry. Principles of evidence-based medicine (EBM) lead inextricably to two justifications NOT to use qSOFA to define sepsis. These include 1) Use of qSOFA for ED diagnostic purposes would require "circular reasoning" & 2) An ED environment differs markedly from ICUs in which qSOFA was validated.

Results: *227 Tx/Rel septic pts included those with SKIN (31), PYELO (38), PYELO (111) or PNEU (47). *The 7dMort and 30dMort were 0/227 (0%) (95% CI 0-1.3%). *33/227 (13.3%) returned to the ED within 30 d with a similar chief complaint, mostly between 72 hr. & 30 d. after the initial ED visit. *4/33 were admitted for inpatient care within 30 d.; only 1 of these 4 patients' admitting diagnosis was related to their initial ED chief complaint.

Conclusion: Prior outcomes studies have overlooked study of septic pts of the type included in this study. ED physicians successfully identified pts with sepsis, as classically defined, to be Tx/Rel from the ED. Low risk existed for 7dMort or 30dMort, or need for admission to hospital for a reason related to the initial visit. Occasional pts will deteriorate or fail to improve, demonstrating that clear "ED return precautions" are important. No clinical strategy is foolproof, but we provide evidence to help support medicolegal defense of physicians who, using a supportable clinical rationale, Tx/Rel a septic pt with an inf dx after an episode of ED care.

324 Perceptions of Emergency Medicine Resident Efficiency after Speech Recognition Technology Implementation

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Study Objectives: The benefits of electronic health records (EHR) are well established, even in the emergency department (ED), but they can be time-consuming. In an academic ED, resident time is at a premium. Each shift residents are trying to balance improving content knowledge, accuracy and efficiency of patient care, and documentation. Emergency medicine (EM) residents agree that time spent on documentation directly reduces teaching time and that more time is spent on documentation than direct patient care. Of the proposed tools to address this problem, speech recognition technology (SRT) has been shown as an effective way to increase overall physician efficiency. The primary objective of this study is to determine EM