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and post-intervention surveys with 5-point Likert scale items evaluating block-specific procedural self-efficacy, including sonoanatomy identification and ultrasound-guided in-plane needle visualization. Responses were dichotomized as not confident (0–3) or confident (4–5). Paired pre- and post-intervention responses were compared using McNemar's test.

Results: Paired pre- and post-intervention surveys were analyzed. Confidence in block-specific procedural skills demonstrated the greatest improvement. The proportion of trainees reporting confidence in identifying relevant sonoanatomy (fascia iliaca, iliopsoas, and femoral nerve) increased from 5% pre-intervention to 95% post-intervention ($p < .001$). Confidence in ultrasound needle tip identification and in-plane needle guidance similarly increased from ≤20% pre-intervention to 95% post-intervention (all $p < .001$).

Conclusion: A low-cost ballistic gel phantom paired with a brief, structured curriculum significantly improved emergency medicine resident and fellow self-efficacy in key procedural components of ultrasound-guided fascia iliaca block. This scalable simulation approach may facilitate earlier and safer adoption of regional anesthesia techniques in emergency medicine training.

20 Prevalence of Secondary Traumatic Stress and Burnout Among Emergency Medicine Residents: A Cross-Sectional Needs Assessment to Guide Wellness Interventions

Caroline Vance, MD, William Mundo, MD, MPH, Genie Roosevelt, MD, MPH, Kelley Roswell, MD

Background: Emergency medicine (EM) residents are exposed to traumatic events resulting in secondary traumatic stress (STS) and burnout, potentially undermining resident wellbeing, team performance, and long-term workforce sustainability. Programs often lack local data to tailor effective support structures.

Methods: A cross-sectional needs assessment survey was administered to one county EM residency which included exposures to potentially traumatic events (PTEs), the Secondary Traumatic Stress Scale (STSS), and the abbreviated Maslach Burnout Inventory (MBI). The MBI has three components: emotional exhaustion and depersonalization (higher scores associated with higher burnout), and personal achievement (higher scores associated with lower burnout).

Results: 43/68 residents (63%) completed the survey. MBI data suggested emotional exhaustion (mean 13.7±4.8) was greater than depersonalization (mean 10.1±4.0), but residents scored highest on personal achievement (mean 15±3.9). The total mean STSS was 45±12 (high STSS category). 43/43 (100%) of residents reported receiving training in resiliency, grief, or stress reduction. 16/40 (40%) stated the residency has adequate support systems in place. 35/39 (90%) reported at least one PTE during residency. The most frequent PTE exposures were systemic failures (100%), patient suffering and death (97%), violent patients (95%), and witnessing traumatic injuries (93%). The most common symptoms reported after PTEs were poor sleep (77%), decreased mood (70%), and anxiety (67%). Residents identified the following coping strategies as very effective or effective after PTEs: talking to a colleague (98%), spending time with loved ones (95%), exercise (85%), team debrief (70%), and talking to a mentor (70%). Residents stated they were very likely or likely to utilize the following resources for PTEs: debriefing (83%), mental health professionals (58%), and mobile health applications (53%). 31/40 (78%) stated they would be or may be interested in piloting a longitudinal incident support tool.

Conclusion: PTEs, traumatic stress, and burnout are common in EM residency but residents maintain a sense of personal achievement. Coping strategies outside the hospital are commonly used and debriefing appears to be both effective and likely to be utilized. Residents are receptive to trialing an incident support tool.

21 Artificial Intelligence-Powered Electrocardiogram Interpretation Identifies STEMI Earlier than Physicians

Brandon L. Eller, MD , Owen A. Radey, Alexandra K. Inslee, MPH, Peter L. Barros, Robert Herman, MD, PhD, Daniel J. Tancredi, PhD, Bryn E. Mumma, MD, MAS

Background: Rapid identification of ST segment elevation myocardial infarction (STEMI) and STEMI equivalent patterns on electrocardiogram (ECG) is critical to reducing patient mortality and achieving guideline-recommended metrics. Our goal in this study was to determine whether an artificial intelligence (AI) system for ECG interpretation can identify STEMI and equivalent patterns on ECG in emergency department (ED) patients more rapidly than physicians.

Methods: We performed a retrospective, observational study of patients from 1/1/20 to 12/31/23 at a single academic medical center who were found to have acute coronary occlusion on emergent coronary angiography and who had at least one ECG tracing prior to the start of coronary angiography that was diagnosed by Queen of HeartsTM AI-ECG model as STEMI/equivalent. The outcome was difference in diagnostic ECG time. Physician diagnosis was defined as the time of last ECG prior to cardiac catheterization lab (CCL) activation. If no ECG prior to CCL was available, the CCL activation time was used as the diagnosis time. The AI-ECG diagnosis time was defined as the time of the first ECG interpreted by the system as positive for acute coronary occlusion. If no ECG prior to CCL activation was available and the AI-ECG model interpreted the first available ECG as positive for acute coronary occlusion, the CCL activation time

was used as the diagnosis time. Descriptive statistics were performed.

Results: We studied 248 patients with acute coronary occlusion on emergent coronary angiography; median age was 62 years (25th, 75th 54.5, 70), 183 (74%) were male, and 179 (72%) arrived via emergency medical services. The median interval from ED arrival to diagnosis by physicians was -3 (25th, 75th -14, 10) minutes and by the AI-ECG model was -5 (25th, 75th -18, 7) minutes. Of the 70/248 (28%) with differing diagnostic intervals, 67/70 (96%) were diagnosed earlier by the AI-ECG model and the median time difference (n=70) was 16 (25th, 75th 4, 48) minutes.

Conclusions: Application of an AI model for ECG interpretation in patients with suspected STEMI may decrease the time to diagnosis compared to physicians alone.

22 Effectiveness of Opt-Out HIV Testing in the Emergency Department: A RE-AIM-Informed Evaluation of Linkage to Care

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Background: Since 2023, the Emergency Department (ED) at St. Joseph's Hospital and Medical Center in Phoenix, AZ has provided free opt-out HIV testing through Gilead's FOCUS Program to patients aged 18 years and older who receive bloodwork in the ED, with linkage-to-care (LTC) services offered for both newly and previously diagnosed patients. Program workflow is evaluated using an implementation science framework to improve delivery and address barriers to integration. This presentation builds on prior evaluation efforts and focuses on program effectiveness related to LTC.

Methods: The RE-AIM framework (Reach, Effectiveness, Adoption, Implementation, and Maintenance) was used to analyze quantitative and qualitative program data from 2025, including the number of eligible patients tested and the number of HIV-diagnosed patients linked to care. Effectiveness was assessed through qualitative content analysis of electronic health record chart reviews, systematically coding LTC actions and documented barriers and facilitators at the individual, programmatic, and structural levels for patients with confirmed HIV diagnoses.

Results: In 2025, 9,754 ED patients were tested and 97 were confirmed HIV-positive. Among these patients, 38 were already engaged in care, 22 were successfully linked to care, and 37 were lost to follow-up, declined LTC, or had pending appointments. Key facilitators to LTC included family support, access to transportation, insurance coverage, and acceptance of HIV diagnosis. Identified barriers included delays in confirmatory test results limiting bedside navigation, unreliable contact information, and socio-structural factors such as housing instability.

Conclusion: Using the RE-AIM framework allowed for systematic assessment of program effectiveness and identification of actionable opportunities to strengthen LTC processes. Findings highlight multi-level barriers and facilitators that inform program implementation and maintenance and are relevant to other EDs implementing opt-out HIV testing among vulnerable populations.

23 Evaluating Emergency Department Naltrexone Initiation Using a Large Multicenter Database

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Background: Alcohol Use Disorder (AUD) is the most commonly diagnosed substance use disorder in the US. While previous studies have demonstrated the benefits of naltrexone for AUD, data are limited on the patients who receive treatment as well as the outcomes following naltrexone initiation (NI) in Emergency Departments (EDs). The objectives of this study are to assess and compare characteristics and 1-year outcomes of patients prescribed naltrexone for AUD in EDs versus patients prescribed in ambulatory clinics (ACs).

Methods: The TriNetX US database was queried to establish 2 cohorts between 2007 and 2023: patients who were diagnosed with AUD who had received naltrexone initiation in an ED versus initiation in an AC. We excluded patients with a history of opioid use disorder. We compared the demographics of the ED and AC cohorts in the 5 years before NI. After propensity score matching, the prevalence of the following alcohol-related negative 1-year outcomes was assessed: cirrhosis, acute pancreatitis, alcoholic liver disease, and alcoholic gastritis.

Results: Each cohort contained 6,235 patients. As compared to the AC cohort, the ED cohort was significantly more likely to be younger, homeless, male, and Black or Hispanic. In the 5 years before NI, the ED cohort was more likely to have experienced depression, elevated AST/ALT, gastritis, pancreatitis, and cirrhosis. The ED cohort experienced greater risk of observed outcomes one year post NI with an odds ratio (OR) of 4.86 (95% CI: 3.33,7.08) for alcoholic gastritis, an OR of 3.42 (95% CI: 2.63,4.46) for acute pancreatitis, an OR of 2.13 (95% CI: 1.56,2.90) for liver cirrhosis, and an OR of 2.40 (95% CI:1.89,3.04) for alcoholic liver disease.

Conclusion: Findings suggest patients who received NI in the ED had a higher prevalence of comorbidities than those who received NI in the AC. The ED group also had more negative health outcomes 1 year post-NI than those in the AC. Results suggest NI may occur later in the course of illness