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➢ **Category:** Administration (incl. medicolegal and career advancement)

ID: 45 - No More Orphans – A Workflow to Improve Point-of-Care Ultrasound Documentation

Authors: Laura Voges[1], Christopher Kelly[1] *(Presenting)*, Keaton Morgan[1], Jamal Jones[1], David Crockett[1], Jennifer Cotton[1], Cameran Mecham[1]

Affiliations:

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Abstract:

Background: Accurate and complete documentation of point-of-care ultrasound (POCUS) studies performed in the emergency department (ED) is essential for patient care, medical record-keeping, and improved billing. However, there are many barrier to documentation completion for POCUS studies in the ED including time constraints, tedious software, and motivation. This study was conducted to evaluate the effectiveness of a new documentation workflow for POCUS studies.

Method: This study evaluates the impact of implementing an electronic medical record (EMR) procedural note template and reminders of incomplete notes on the completion rates of POCUS procedure notes. Data was collected from a single center university emergency department and was compared between one year prior to and one year after the implementation of the new process. The data was taken throughout each year in three time periods to monitor the progression of note completion as the new documentation process was put into effect. The primary outcome of this study was the note dropout rate defined as the percentage of POCUS exams with images saved and incomplete documentation.

Results: Following the introduction of the procedural note template, the note dropout rate significantly decreased from a mean of 34% (standard deviation (SD) 2.6) to a mean of 6% (SD 6.6, $p<0.005$), indicating a substantial improvement in documentation completion. After the new template was introduced, note dropout rate decreased from 13% during the first time period of implementation to 5% in the second period and then again to 0% by the last period of the study. This trend likely represents the ease of use of the template and the habit of incorporating it into practice in regular documentation. The overall reduction in dropout rates highlights the effectiveness of the structured template in ensuring more consistent and thorough documentation of POCUS procedures.

Conclusion: The transition to a structured procedural note format for POCUS documentation within the EMR significantly enhanced the completion rates of procedure notes in a university emergency department setting. This improvement in documentation practices can lead to more reliable medical records, improved communication between providers, accurate billing, and more consistent care that is seen with completed and fully interpreted images.

➢ **Category:** Administration (incl. medicolegal and career advancement)

ID: 63 - Improving Patient Safety: A Novel 'Look Back' Method for Detecting Diagnostic Errors in the ED

Authors: Suresh Pavuluri[1] *(Presenting)*, Rohit Sangal[1], Reinier Van Tonder[1], Arjun Venkatesh[1], Vivek Parwani[1], Kwame Tuffuor[1], Eleanor Reid[1], Andrew Ulrich[1], Craig Rothenberg[1], Asim Tarabar[1], Richard Andrew Taylor[2], John Sather[1]

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Abstract:

Diagnostic errors and the harms associated with misdiagnosis represent a growing focus in the patient safety movement. Traditional quality improvement methods rely on criteria such as 72-hour returns, ED mortalities, or patient complaints, but provide an incomplete picture of diagnostic accuracy. This study sought to address these limitations by employing a "look-back" approach, concentrating on a specific diagnosis over a defined time frame, and reviewing prior ED treat-and-release visits using the modified SaferDx framework.

This retrospective study identified patients with appendicitis, traumatic SDH & SAH using ICD-10 codes, focusing on those with prior ED treat-and-release visits within one-week and two-week time frames at a large healthcare system in the Northeast, from January 2022 to May 2024. Patients under the age of 18 and patient transfers were excluded. If a look-back ED visit within the specified time frame did not have an ICD-10 code matching the primary diagnosis of interest, it was considered a potential diagnostic error. These identified cases were then reviewed and scored by two experienced physicians in quality and safety, using the modified SaferDx framework. The results of this innovative approach were subsequently compared to diagnostic errors identified through traditional methods in our institution's Q&S Database during the same study period.

Compared to the traditional quality improvement approaches, our "look back" approach identified 17 cases of missed appendicitis and 28 cases of missed traumatic SDH & SAH compared to a total of 3 cases of missed appendicitis and missed traumatic SDH & SAH using the traditional quality improvement methods. Of the 17 potential missed appendicitis cases in the "look back" approach, manual scoring using the modified SaferDx framework identified 7 of these cases as strongly suggestive of a diagnostic miss. Among the 28 cases of potentially missed SDH & SAH, manual scoring identified 3 cases as strongly suggestive of a diagnostic miss or error. The intra-rater reliability between the manual scores was 0.70.

Our data shows that the "look back" approach identifies potentially more diagnostic errors for certain conditions compared to traditional QI approaches. These findings suggest large-scale initiatives that integrate retrospective review methods could significantly enhance the identification of diagnostic errors that are not captured through traditional quality improvement methods.

➢ **Category:** Administration (incl. medicolegal and career advancement)

ID: 111 - Does Sharing Data On The Rate At Which Clinicians Work Alter Their Practice? A Study In A UK ED.

Authors: Alexander Russell[1] *(Presenting)*, Mark Harrison[1]

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Abstract:

Objective:
* To assess whether sharing the number of patient's a clinician sees on average per shift with the clinicians in question increases the number of patient's they see per shift (hereafter called 'activity data') within a UK Emergency Department (ED).
* To assess clinician perspectives on the sharing of such data.
Background: * Several UK EDs are already sharing staff activity data with staff in an effort to drive up the rate at which clinicians see patients, but there is no published evidence that this is effective or of the impact of this upon clinicians.
Methods:
* A prospective quantitative and qualitative study looking at the number of patients seen per shift pre and post activity data being shared. Study took place from December 2024 to April 2025.
* Quantitative analysis was done by weekly data supplied by the hospital's clinical information services on the number of patient's a clinician sees per shift – this was recorded by clinicians placing their name in the "seen by" column against a patient's name on the hospital electronic patient record system 'nervecentre'.
* A 4-month period in which the same clinicians would be in the department was chosen, with 2 months for baseline data collection, 1 month for data sharing and impact measurement and 1 month to see if activity returned to baseline to assess whether a Hawthorne Effect existed.
* Qualitative analysis was done by means of an electronic survey sent to all ED clinicians. This was done with statements expressed on a Likert scale and some free text responses.
Results:
* Sharing activity data with clinicians increased the average number of patients seen per clinician per shift by 0.65 months between 2 and 3. This was a statistically significant change (p=0.001). Month 4 is currently ongoing to see if there is a return to baseline.
* Survey results showed negative clinician perceptions on the sharing of activity data with the vast majority stating that it would have a negative impact on staff, with no change to the way or speed by which they work.
Conclusions:
* Sharing activity data with clinicians increases the number of patients that they see per shift on average. However, this is a modest increase relative to the potential negative impacts upon staff morale and working conditions.
* Clinicians were of the perspective that knowledge of the data would not alter their practice, which conflicts with the reality which shows an increase in the number of patients seen on average per shift.

- **Category:** Administration (incl. medicolegal and career advancement)

ID: 120 - Calibrating Diagnostic Errors: The Emergence of a Diagnostic "Gray" Zone

Authors: Suresh Pavuluri[1] *(Presenting)*, Rohit Sangal[1], Arjun Venkatesh[1], Richard Andrew Taylor[2], John Sather[1]

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Abstract:

Introduction: Diagnostic errors are a growing patient safety concern, yet traditional quality improvement (QI) methods, such as 72-hour returns and mortality reviews, incompletely capture missed diagnoses. We evaluated a "look-back" approach, retrospectively reviewing prior emergency department (ED) treat-and-release visits for patients diagnosed with appendicitis, traumatic subdural hemorrhage (SDH), or subarachnoid hemorrhage (SAH), over a defined "look back" period to identify potential diagnostic errors. When measuring our results, a new phenomenon emerged, where there was disagreement on whether a diagnostic error was present that we dub as the "gray" zone.

Methods: This retrospective study analyzed adult patients diagnosed with appendicitis, SDH, or SAH from 01/2022 to 05/2024 that had prior ED treat-and-release visits at a large Northeastern healthcare system over a two-week or week-long period, respectively. Two emergency physicians with quality and safety expertise scored cases using the modified SaferDx framework (IRR=0.70) to assess for potential diagnostic errors.

Results: The look-back approach identified 17 cases of potentially missed appendicitis and 28 cases of missed traumatic SAH/SDH, compared to 3 and 1 cases, respectively, using traditional QI methods. Of these, 7 appendicitis and 1 SAH/SDH cases were classified as definitive diagnostic misses by both reviewers. However, there was disagreement among the reviewers on whether there was a diagnostic error on 2 cases of appendicitis and a case of traumatic SAH/SDH. Further thematic analysis of these disagreements revealed a diagnostic "gray zone," where diagnoses were over-ruled by downstream decision-makers. These findings highlight challenges in standardizing diagnostic error measurement.

Conclusion: The look-back approach identified significantly more diagnostic errors than traditional QI methods. However, the emergence of a diagnostic "gray zone" underscores the challenges in calibrating diagnostic errors, as disagreements arose regarding whether an error had occurred due to complexities in clinical decision-making, interdisciplinary collaboration, or system-level constraints. These findings highlight the need for structured adjudication frameworks and consensus-driven methodologies to standardize diagnostic error classification, ensuring more accurate and meaningful assessments of diagnostic performance across specialties.

➢ **Category:** Administration (incl. medicolegal and career advancement)

ID: 187 - Current State of Emergency Department Boarding: A Call to Reimagine Resources to Meet Patient Needs

Authors: Christine Chien[1], Peter Vajda[1] *(Presenting)*, Howard Klausner[1], Namita Jayaprakash[1], Seth Krupp, Mit Patel[1], Jo Ann Rammal[1], Victoria Al Karaki[1], Jennifer Stevenson[2], Steven Rockoff[3], Dmitry Davydov[3], Satheesh Gunaga[4], Jennifer Stephens-Hoyer[5], Solomon Knicely[6], Jason Vieder[2], Anthony Cruz[7], Gust Bills[7], Jacob Sinkoff[8], Megan Cahill[9], Heather Cronovich[9], Anthony Colucci[9], Brittany Betham[1]

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Abstract:

Emergency Departments (EDs) are experiencing an unprecedented increase in boarding patients which is impacting the ability to provide efficient and safe patient care. While this issue is recognized in tertiary care hospitals, it remains less explored in community and freestanding EDs. The objective of this study is to explore the relationship between annual patient visits and patient hours of care provided in EDs. We hypothesize that despite decreasing annual patient visits, more hours of patient care are being provided.

The electronic health record (EHR) in a Michigan health care system with 9 Emergency Departments were analyzed for 2018 and 2023. These include: 1 tertiary care hospital, 4 community EDs and 4 free standing EDs. Metrics includedTotal Annual Patient Volume, Daily census, and daily Patient Hours of Care (PHC). A descriptive analysis was used to identify trends and differences when comparing2023 to 2018, in these different types of EDs.

For community EDs, total annual volumes decreased from 244,753 in 2018 to228,896 in 2023, while PHC increased from 2,944 to 3,810. Freestanding EDs saw a slight decline in total annual volume, from 129,547 in 2018 to 128,156 in 2023, but daily PHC rose from 845 to 1,041. The tertiary care hospital ED experienced the most pronounced decline in total annual volume, from 101,210 in 2018 to 84,792, yet daily PHC significantly increased from 1,601 to 2,056. While all EDs experienced increased PHC in 2023 compared to 2018, the tertiary ED had the most significant drop in total annual census (16.2%), compared to both free standing (1.1%) and community EDs (6.5%) [Figure 1]

This study demonstrates a paradigm shift in ED utilization in the post COVID-19 era, with decreased patient volumes but increased PHC across health system EDs (tertiary referral, community, and free standing). Freestanding and community EDs saw slight annual volume decreases but significant percentage increases in PHC (23.2% versus 29.4% respectively) [Figure 2]. This PHC increase was slightly less pronounce din the tertiary care setting which also experienced significant reduction in annual volume. These trends highlight evolving patient care needs in Emergency Medicine and stress the importance of resource allocation and workforce adjustments to manage the increase of PHC.

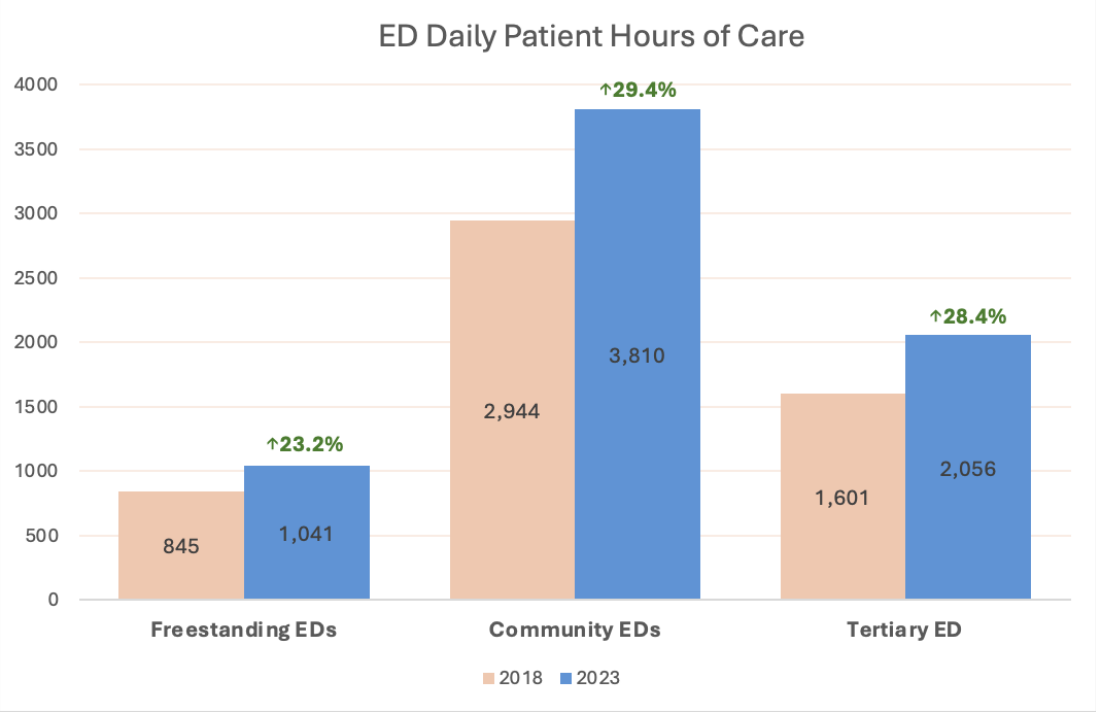

Figure 1. Comparison of ED daily PHC between site and year.

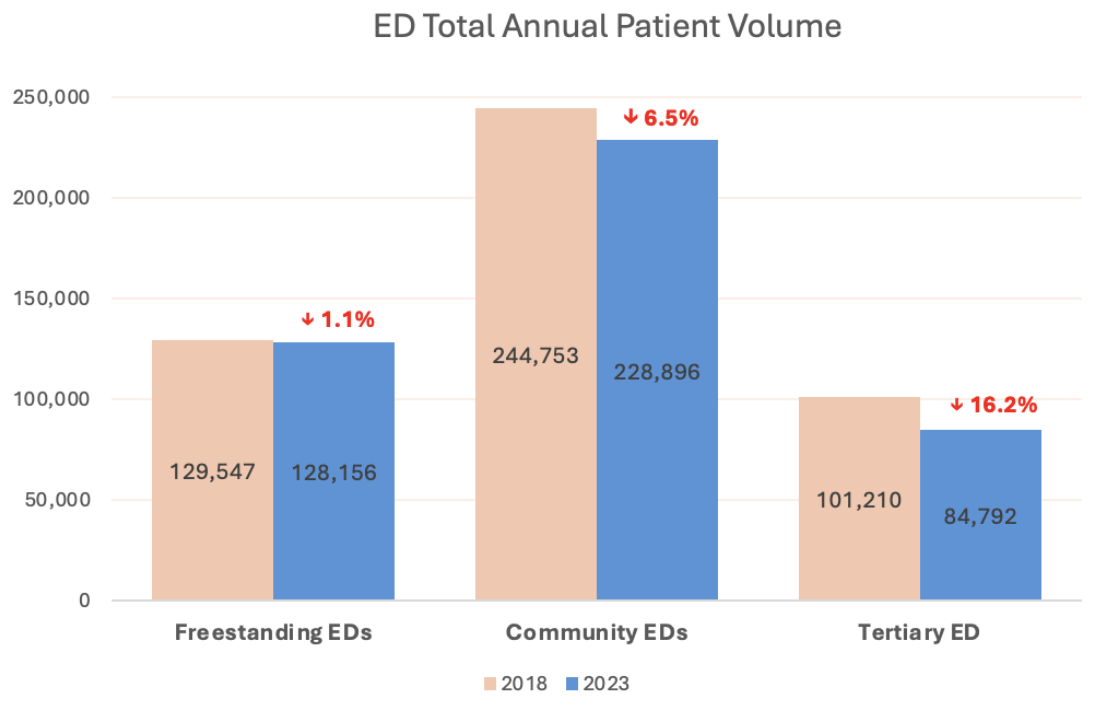

Figure 2. Comparison of ED total annual patient volume between site and year.

➢ **Category:** Conflict and Disaster Medicine

ID: 115 - Civilian and Economic Impacts of Simulated Prolonged Large-Scale Combat Operations

Authors: Alexis Zebrowski[1] *(Presenting)*, David Buckler[1], Kevin Petrozzo[1], Yosef Travis[1], Sarah Mccuskee[1], Ellerie Weber[1]

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Abstract:

Objective: Our goal was to estimate the financial impact of a large-scale combat operation (LSCO) on a subset of civilian hospitals during an activation of the United States (US) National Disaster Medical System (NDMS).
Background: Activation of the NDMS enables civilian healthcare facilities to provide definitive care for combat casualties returning to the US. With an NDMS activation, participating civilian healthcare systems must balance care for repatriated casualties with sustaining "normal" operations for civilians to ensure financial stability and medical continuity.
Methods: We created a discrete event simulation for five civilian healthcare facilities in Omaha, Nebraska. Using 2019-2020 hospital-specific cost accounting data and publicly available state-wide discharge level data, patient characteristics and length of stay were derived for military casualties from existing civilian data. Hospital-level financial measures (expected cost and reimbursement) were also identified. Baseline hospital and surge capacities were then modeled in combination with reimbursement rates ranging from 75-125% of Medicare rates coupled with additional $0-5000/patient lump sum payments. 150 combat casualties/day for 100 days were distributed across Omaha hospitals after it reached equilibrium using a case-weighted random sample from the hospital's historic civilian data. Changes to financial and occupancy measures before, during, and after NDMS activation periods were calculated.
Results: Simulations showed that 10,905 patients [95% CI: 10551 - 11248] were displaced and left untreated if combat casualties were permitted to displace civilian patients. At 125% of the Medicare reimbursement rate, costs for combat casualties was $462 million but hospitals would see a net income gain of 2,281% over the pre-surge 100-day baseline. This percent increase was dependent on pre-activation occupancy levels. For reimbursement less than 125%, all hospitals had a net income loss compared to the pre-activation period.
Conclusions: Civilian facilities stand to lose significant revenue while caring for combat casualties, and the need to identify an appropriate reimbursement level for civilian hospitals providing care to combat casualties remains. This simulation highlights the simultaneous challenge of caring for civilians and combat casualties returning from a LSCO in an era of high ED boarding, constrained staffing, and small operating margins.

➢ **Category:** Conflict and Disaster Medicine

ID: 242 - Indirect Exposure to Atrocities and PTSD among Aid Workers: Hemispheric Lateralization Matters

Authors: Einav Levy[1] *(Presenting)*, Yori Gidron[2]

Affiliations:

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Abstract:

Humanitarian aid workers (HAWs) are indirectly exposed to atrocities relating to people of concern (POC). This may result in a risk of secondary traumatization demonstrated by post-traumatic stress symptoms (PTSSs). Previous studies have demonstrated that hemispheric lateralization (HL) moderates the relationship between threat exposure and post-traumatic stress symptoms (PTSSs). Aims: We hypothesized that indirect exposure to atrocities (IETA) would be positively correlated with PTSSs among HAWs with right and not left HL. Method: Fifty-four HAWs from several countries that provided humanitarian support in Greece and Colombia participated in this correlational and cross-sectional observation study. They completed scales relating to IETA, PTSSs were assessed using a brief, valid scale, and HL was measured. Results: IETA was positively and significantly related to PTSSs ($r = 0.39$, $p < 0.005$). Considering HL, IETA was unrelated to PTSSs among people with right HL ($r = 0.29$, $p = 0.14$), while IETA was related to PTSSs among people with left HL ($r = 0.52$, $p = 0.008$). Right HL emerged as a protective factor in the relationship between IETA and PTSS. Conclusions: An assessment of dominant HL can serve as one consideration among others when deploying HAWs in specific locations and roles, vis à vis IETA. Moreover, those found to have a higher risk for PTSSs based on their HL could be monitored more closely to prevent adverse reactions to IETA.

➢ **Category:** Conflict and Disaster Medicine

ID: 270 - Ukrainian foreign field hospital: a case study in modern disaster preparedness.

Authors: Ahmad Nama[1] *(Presenting)*, Evan Avraham Alpert[1], Lea Ohana Sarna Cahan[1], Saar Hashavya[1]

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Abstract:

Background: Military conflicts and natural disasters often significantly damage local medical infrastructure. This urgent need for emergency care and treatment of mass casualties has prompted temporary measures, such as deploying foreign field hospitals in affected regions, until the implementation of sustainable solutions. In March 2022, after the Russian invasion of Ukraine, Hadassah Medical Center and Hadassah International dispatched a team to establish a medical field hospital at the Polish-Ukrainian border. Located at the transit center in Przemyśl, this field hospital served as the main clinic for refugees seeking medical assistance at the border crossing.
Methods: Before arrival in Ukraine, medical personnel delegations were coordinated via Zoom by the Emergency Department Director at Hadassah Medical Center in Ein Kerem, Israel. Each team spent two weeks on-site utilizing medication and supplies from Israel, Poland, and other humanitarian aid organizations. Each group included doctors specializing in emergency medicine, pediatrics, psychiatry, and gynecology. Medical clowns joined them later. An operations administrator managed the logistics for volunteers, including food, accommodations, car rentals, and refueling. First-hand calculations of treating physicians determined the number of patients seen; electronic records were unavailable due to the overwhelming number of refugees.
Results: Fifteen consecutive delegations included 100 medical professionals from Israel and 50 personnel from Chile, Argentina, Mexico, Switzerland, and Poland. The field hospital operated for 110 days, caring for over 35,000 Ukrainian refugees. Clinical services featured point-of-care (POCUS) ultrasounds, telemedicine when suitable, and training of local doctors in mass casualty management and trauma care at Lublin Hospital. The field hospital included: Site A, the leading site located in a Tesco area, accommodated incoming refugees working in three daily shifts; Site B, a mall, collaborated with Italian medical volunteers, primarily for pediatric care; Site C, a theater, housed refugees in need of medical supervision. Rounds were held at 16:00-18:00 daily to assess patients and distribute medications.
Conclusion: Medical field hospitals provide essential, life-saving aid to refugees from countries affected by military conflict. Lessons on the logistics of such hospitals offer crucial information to enhance global preparedness to support other countries in times of need.

- **Category:** Others

ID: 247 - Impact of Artificial Intelligence Model on Reader Performance in an Emergency Setting

Authors: Ibrahim Shodipe[1] *(Presenting)*, Asim Habib[1], Muhammad Saleem Nasir[1], Sufyan Babiker[1], Arsalan Arshad[1]

Affiliations:

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Abstract:

Objective: This study evaluates the impact of a deep learning-based artificial intelligence (AI) model for fracture detection in musculoskeletal (MSK) radiographs within an emergency department, involving junior physicians, senior physicians, and nurse practitioners. All participants of the study work in the emergency department of the host institution (Wrightington, Wigan and Leigh Teaching Hospitals NHS Foundation Trust).

Background: Between April 2019 and April 2020, the number of patients presenting to emergency departments with fractures or acute dislocations in the United Kingdom increased by 23% compared to the previous year (UK NHS Annual Report, 2021). Missed or delayed diagnoses of fractures on standard X-rays are common diagnostic errors, accounting for 3% to 10% of such mistakes (Wei et al., 2006; Hallas and Ellingsen, 2006). Over the past decade, artificial intelligence (AI) has emerged as a promising tool in fracture detection and requires reliable and robust data under real-life conditions (NICE guidance, 2025).

Methods: The study was conducted between February and April 2025 on 130 complex MSK radiographs obtained from 50 patients, selected by a senior radiologist (ground truth). In a first phase, the performance of emergency nurse practitioners (n=2), clinical fellows (n=2), junior physicians (n=1), advanced nurse practitioners (n=2), and senior physicians (n=2) was assessed. A washout period of 4 weeks was applied before the second phase. In phase 2, the same readers re-evaluated the same radiographs, which had been processed by the AI software, and provided new diagnoses. Performance metrics, including sensitivity, specificity, negative predictive value (NPV), positive predictive value (PPV), and reading time, were compared between phase 1 and phase 2.

Results: In phase 1, results showed a sensitivity of 0.52, a specificity of 0.86, an NPV of 0.39, and a PPV of 0.92, while in phase 2, results showed a sensitivity of 0.70, a specificity of 0.88, an NPV of 0.51, and a PPV of 0.94. Average reading time was shortened by 34.9 seconds. Details are presented in Table 1.

Conclusions: This study demonstrated that the AI model significantly enhanced reader performance, including sensitivity, specificity, PPV, and NPV for fracture detection on X-rays while reducing reading time for all participants. The robust performance of the AI model supports it as a reliable tool for detecting fractures in a real-world emergency clinical setting.

- **Category:** Administration (incl. medicolegal and career advancement)

ID: 218 - Implementing a Limb Preservation Pathway: Impact on ED Patient Progression and Medical Management

Authors: Jackson Agraz[1] *(Presenting)*, Noel Mukubwa[1], Sarah Wendel[1], Moira Smith[1], Timothy Layng[1]

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[1]University of Virginia, Charlottesville, USA

Abstract:

Background: Chronic lower extremity wounds, especially those concerning for osteomyelitis, pose a significant challenge in the emergency department (ED) due to inconsistent clinical evaluation, imaging, and specialty consultation practices. These inconsistencies can lead to prolonged ED stays, unnecessary imaging, inappropriate antibiotic use, and inefficient care coordination. To address these issues, the University of Virginia developed the Limb Preservation Pathway.

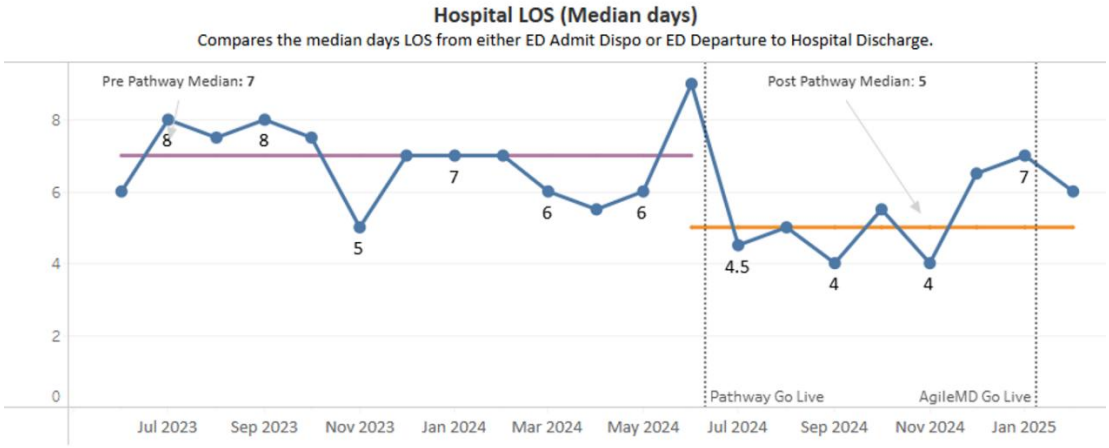
Objectives: The primary goal of the Limb Preservation Pathway was to standardize the management of chronic wounds in the ED to optimize patient care. Specific objectives included reducing ED length of stay, decreasing unnecessary MRI utilization, minimizing non-emergent orthopedic consultations, and enhancing antibiotic stewardship.

Methods: In early 2024, a multidisciplinary team from emergency medicine, internal medicine, infectious disease, orthopedics, and vascular surgery collaborated to create the Limb Preservation Pathway. This pathway stratifies patients into three categories: those appropriate for discharge, those requiring inpatient workup, and those needing urgent surgical intervention. It outlines wound classification, antibiotic recommendations, and appropriate timing for specialty consultations. A data dashboard was developed to monitor performance metrics including ED length of stay, hospital length of stay, MRI usage, orthopedic and Limb Preservation consults, and antibiotic administration.

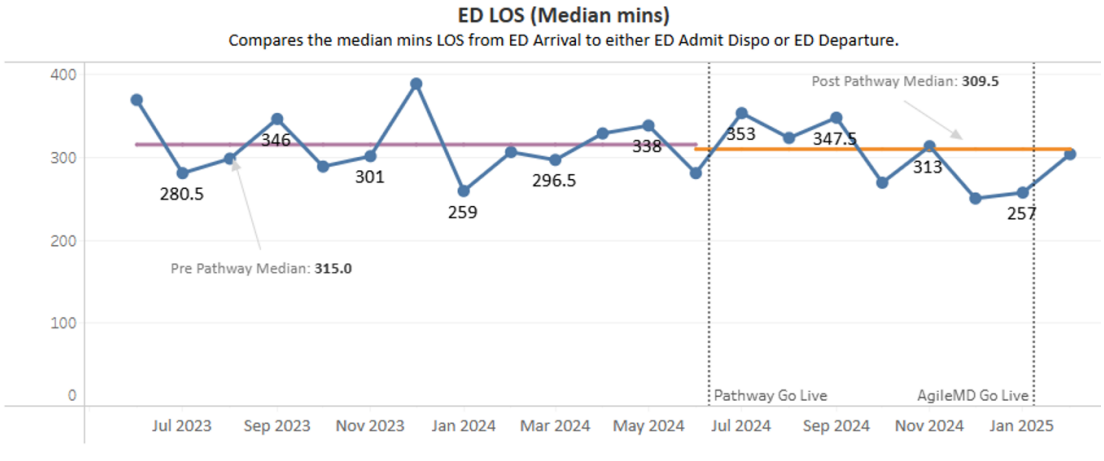
Results: The pathway had a variable impact on key metrics. ED length of stay remained relatively stable (median 315.0 minutes pre-implementation vs. 309.5 minutes post-implementation). However, hospital length of stay significantly decreased from a median of 7 days to 5 days. Antibiotic usage saw a slight reduction (from 86.2% to 81.3% of encounters). MRI utilization in the ED was unchanged, with finalized foot/toe MRI studies remaining at 10.5%. Notably, orthopedic consultations significantly decreased, while use of the Limb Preservation consult service increased, improving care coordination and specialty engagement.

Conclusions: The Limb Preservation Pathway improved inpatient care efficiency and interdisciplinary coordination, particularly through reduced hospital length of stay and increased utilization of targeted consult services. Ongoing refinement is needed to achieve greater impact on ED-specific metrics and fully optimize patient progression.

[Figure 1]



[Figure 2]



- **Category:** Cardiovascular

ID: 174 - A notch above the rest: diagnosing proximal aortic dissection using the suprasternal notch view

Authors: Kayla Jaime[1,2] *(Presenting)*, Giancarlo Schillaci[1], Gagandeep Singh[1]

Affiliations:

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Abstract:

Background: Aortic dissections are relatively uncommon vascular emergencies that require urgent diagnosis and intervention as they carry high mortality rates.
Clinical Case: A 79-year-old male with a past medical history of hypertension, hyperlipidemia, aortic valve replacement, mitral valve replacement, pulmonary hypertension, chronic obstructive pulmonary disorder, diabetes mellitus, and gout presents to the emergency department with acute onset, atraumatic left thigh pain of several hours duration. He has no chest pain or other complaints. His exam findings were notable for: Vitals: HR: 86 , BP: 135/87, RR: 20, T: 97.8F, SpO2: 96%, no palpable pulse on left dorsalis pedis. No palpable L femoral pulse and an extremity that was cool to touch.
Case Discussion: The diagnosis of acute proximal aortic dissections (AD) can be challenging, particularly in patients with atypical presentations as with this case. While ultrasound is not the gold standard imaging modality for AD, it serves as an integral diagnostic tool in the ED that can expedite time to definitive imaging and management. In the rapid assessment of suspected cardiac disease or aortic pathology, bedside transthoracic echocardiogram (TTE) is ideal for initial imaging in patients with suspected proximal aortic dissections. This is typically performed using the phased array probe in the parasternal long axis, parasternal short axis, apical four chamber, and subxiphoid views. However, the suprasternal notch view (SSNV) allows for direct visualization of the aortic arch, as well as the origins of the left subclavian, left common carotid and innominate arteries as with this case. While commonly used by trained cardiac sonographers, it is not routinely taught or employed by emergency physicians. On evaluation of this patient, a flap in the aortic root was visualized on the SSNV, lending itself to high suspicion for Type A dissection.
Clinical Pearls: SSNV serves as a great adjunct to cardiac bedside echoes as it can show a detailed view of the ascending and thoracic aorta and can be utilized even when the rest of the chest is occupied such as during use of a cardiac compression device during cardiac arrests. Aortic dissections do not always present with textbook “ripping back pain” and patients can oftentimes have normal vitals signs on arrival.

Figure 1: Dissection flap visible in aortic root on suprasternal notch view of cardiac POCUS

➢ **Category:** Cardiovascular

ID: 133 - Duration and Frequency of Methamphetamine Use and Associated Reduced Cardiac Ejection Fraction

Authors: Madison Nashu[1], Jordan Lam[1], Zarak Khan[1], Soheil Saadat[1] *(Presenting)*, Ronald Goubert[1], Roy Almog[1], Edmund Hsu[1], Megan Guy[1], John Fox[1]

Affiliations:

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Abstract:

Introduction: Methamphetamine use is known to cause heart failure, but it remains unclear whether the frequency and duration of use are associated with increasing severity of heart failure. Understanding this relationship is crucial for early diagnosis and timely intervention.

Methods: We used physician-performed Point-of-Care Ultrasound (POCUS) in the emergency department to assess left ventricular ejection fraction (LVEF) and cardiac dilation in patients with methamphetamine use and those without. Demographic data, polysubstance use, and methamphetamine use patterns were collected through patient surveys.

Results: 84 of 136 enrolled patients reported methamphetamine use. Methamphetamine use was associated with reduced LVEF ($p<0.001$). Longer duration ($p< 0.001$) and higher frequency ($p< 0.001$) of methamphetamine use were also associated with higher prevalence of reduced LVEF. Methamphetamine use was associated with abnormal left ventricular end-diastolic diameter (LVEDD) relative to sex ($p = 0.016$). Duration of methamphetamine use was also associated with abnormal LVEDD for each sex, indicating an increased LVEDD with longer methamphetamine use ($p= 0.001$). However, frequency of weekly methamphetamine use was not significantly associated with abnormal LVEDD for each sex ($p=0.057$).

Conclusion: Our findings strongly associate the frequency and duration of methamphetamine use with the risk of developing methamphetamine-associated heart failure with reduced ejection fraction (MethrEF). Given that evidence indicates the effects of MethrEF could be reversible, our data suggests that early use of emergency department POCUS to screen methamphetamine-using patients for heart failure may offer opportunities to help our most vulnerable patients before the harmful effects worsen.

➢ **Category:** Cardiovascular

ID: 99 - Artificial Intelligence is Capable of Accurately Detecting OMI in the ED

Authors: Alexander Bracey[1] *(Presenting)*, Michael Waxman[1], Andrew Chang[1], Maaham Rehman[1]

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Abstract:

Background And Objectives: The STEMI/NSTEMI paradigm has long been accepted as the strongest indicator of acute coronary occlusion. However, 25-30% of NSTEMIs have unrecognized acute total occlusion; conversely, 15-35% of STEMIs are found to be false positives with no culprit lesion. There has been a shift towards a replacement paradigm, known as occlusion myocardial infarction (OMI), that includes ST-elevation in the criteria, among other ECG findings, to determine the need for reperfusion. A novel AI has since been developed presumed to improve the detection of OMI compared to using STEMI criteria alone.

Methods: We conducted a retrospective chart review to evaluate an AI ECG model's ability to detect OMI in high-risk acute coronary syndrome patients presenting to an urban, academic, tertiary care ED. The study period was from 11/24/23 to 7/24/24. Patients were classified as Heart Alert (HA)—patients who did not meet STEMI criteria—or STEMI activations (patients who met STEMI criteria). OMI was defined as either: 1) acute culprit lesion with TIMI 0-2 flow and confirmed OMI on catheterization, or 2) presumed OMI with significant cardiac outcomes, including a) non-occlusive culprit lesion with a High Sensitivity Troponin I (hsTnI) >1000, b) no angiography but elevated hsTnI and new wall motion abnormality on echocardiography, or c) STEMI-positive ECG with death before catheterization. We collected demographic and clinical data. Data analysis was performed using descriptive analytics.

Results: From the current dataset, 160 patients with apparent ACS were included. Of these 160 patients, 94 ultimately had OMI, of which 30 were Heart Alert patients and 64 were STEMI activations. The sensitivity of the AI tool in detecting OMI in the HA and STEMI activation groups was 73% (22/30) and 84% (54/64), respectively. The combined sensitivity of both the HA and STEMI activation groups was 81% (76/94). Between the HA and STEMI activation data, there were 18 false negatives (8 HA, 10 STEMI) where the AI tool incorrectly missed an OMI. The specificity of the AI tool in the combined HA and STEMI activation group was 70%.

Conclusion: In this small cohort of high-risk ACS patients presenting to the ED, the AI was able to detect 81% of OMIs based on initial ECG. Future prospective studies are necessary to confirm these results. Furthermore, comparative studies of AI vs human interpretation may be meaningful in delineating the clinical impact of this novel tool.

➢ **Category:** Social Justice & Public Health (incl. diversity, equity, inclusion, disparities)

ID: 95 - Accuracy of Parental Reporting in Pediatric Immunization Status in the Emergency Department.

Authors: Aneri Patel[1], Michael Waxman[1], Alexander Bracey[1], Ashar Ata[1], Susan Wojcik[2], Lauren Pacelli[2], Christopher Woll[1] *(Presenting)*

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Abstract:

Objective: Describe the accuracy of parental recall in identifying under-immunized pediatric patients in the ED.
Background: Immunization status of pediatric patients in the emergency department often relies on parental reporting, typically limited to confirmation of "up-to-date" status.
Methods: A prospective, cross-sectional study was conducted at two urban tertiary care pediatric emergency departments in upstate New York State between June 2023 and May 2024. Parents of patients aged 2 months to 18 years were surveyed on their child's immunization status and compared to the gold standard of state immunization records or primary care physician report. Discordance was noted if parent identified the child as being immunized but the gold standard did not. Differences between reporting methods was assessed using McNemar's test.
Results: Of 441 patients who were screened, 32 had missing data, withdrew from the study or did not meet inclusion criteria, resulting in 409 patient who were enrolled. The immunization rates (defined by the gold standard) and discordance rates between parental report and the gold standard, in those with statistically significant differences, were as follows: Influenza immunization rate = 41.8% (discordance = 14.67% [95% CI 10.25%–19.09%], p<0.0001), COVID immunization rate = 16.6% (discordance = 13.45% [95% CI 8.29%–18.50%], p<0.0001), Hepatitis A immunization rate = 89.0% (discordance = 4.89% [95% CI 1.34%–8.44%], p=0.01), Hepatitis B immunization rate= 97.6% (discordance = 1.96% [95% CI 0.31%–3.61%], p=0.04).
Conclusion: The study findings suggest at least two points of interest. First, approximately one-third of pediatric emergency department patients were not up to date for their seasonal immunizations, suggesting an opportunity to provide referral to immunization services or to provide 'catch up' immunizations during the visit. Second, there was a modest discordance between parental and state-reported routine childhood immunizations and there was a significant discordance with seasonal immunizations. Therefore, in scenarios where immunization status influences clinical decision making, it may be warranted to clarify parentally reported status. Future research should focus on evaluating which clinical decision making scenarios are impacted by immunization status.

- **Category:** Others

ID: 269 - Cost Savings of Selective Type and Screen Testing in the Emergency Department

Authors: Alberto Perez[1] *(Presenting)*, Rebecca Perez[2], Peter Christatakos[1], Margaret Pichette[1]

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Abstract:

Objective: The overutilization of laboratory testing contributes to the increase in healthcare medical expenditures. A significant number of type and screens ordered in the ED are done on patients that will ultimately not be transfused. Our objective was to determine if an alternative process would decrease the number of type and screens ordered in safe fashion.
Background: Our setting is a community hospital seeing approximately forty thousand emergency department visits annually. Historically, approximately, 17 percent of patients getting a type and screen require a transfusion. Type and screens are part of several order sets. A type and screen is a process that requires laboratory technician time (60 minutes per screen) and has an estimated cost of $100 to $250 dollars per test. A blood bank hold is an order that provides an appropriately labeled sample tube in the blood bank for patients with a low likelihood of transfusion.
Methods: Emergency medicine providers were given the option of ordering a blood back hold instead of a type and screen for patients that were deemed to have a low likelihood of transfusion. The number of type and screens, patients transfused, blood bank holds and number of blood bank holds changed to a type and screen were tracked and analyzed on a weekly basis for a period of 31 weeks.
Results: During the 31-week period, there were 458 blood bank holds, 240 type and screens, 60 patients required transfusions and 14 blood bank holds were converted to type and screens. The number of type and screens ordered decrease from 16.6 per week to 7.74. Only 14 blood bank hold converted to type and screens, thus 444 type and screens were prevented. 444 preventable type and screens represents $73,806.00 to $186,193.00 per year for this institution as well as approximately 745 hours of laboratory technician time yearly.
Conclusions: Reducing unnecessary laboratory testing can contribute to substantial cost savings without compromising patient care. Obtaining a blood bank hold instead of a type and screen in emergency department patients with a low likelihood of transfusion is a safe cost saving measure.