**Emerald Coast 2025 Abstracts**

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**Title and Type of Research:** Caring for Our Own, When The Provider Becomes the Patient, Case Study

**Introduction and Background:** When the U.S. healthcare professional becomes the patient, they have special needs and expectations within hospital emergency rooms. The patient is a “healthcare provider” is included in report throughout the system, but what does that really mean, and how are we caring for own?

**Description:** This presentation will discuss one case study of a nurse's experience in the emergency room, and include the limited existing research.

**Discussion and Conclusion:** The needs of healthcare professionals when they, or their families become patients in the US healthcare system need exploration, so we can better care for our own.

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**Title and Type of Research:** The Art of Foreshadowing Occlusive Myocardial Infarction, Case Study

**Introduction and Background:** The electrocardiogram (EKG) is a vital tool in the evaluation of patients who present to the emergency department with chest pain. Specific EKG changes have been traditionally used to define classic ST segment elevation myocardial infarctions (STEMI’s) while more recently recognized patterns suggest and/or predict the more inclusively termed occlusive myocardial infarction (OMI). Early recognition of these “STEMI/OMI equivalents” is imperative in ensuring rapid treatment and preventable increases in morbidity and mortality. A case of Wellen’s syndrome is presented along with a discussion of all currently recognized STEMI/OMI equivalent patterns and their management nuances.

**Description:** A 51-year-old male with a family history of early coronary artery disease presented to the emergency department for recent chest pain, diaphoresis, and shortness of breath. Asymptomatic on arrival, the patient was placed in the waiting room and when triaged, the electrocardiogram revealed wide and biphasic T waves in the precordial leads V2-V3 suggestive of a Wellens’ syndrome, type A, a pattern known to be associated with a high risk of critical left anterior descending (LAD) artery stenosis with high risk for infarction. Unrecognized at first, the patient remained in the waiting room where he later developed recurrence of his symptoms. A repeat electrocardiogram revealed hyperacute T waves in the anterior leads suggestive of an early infarction. Cardiac markers were elevated, and patient underwent cardiac catheterization with percutaneous cardiac intervention for a near total stenosis of the proximal LAD artery.

**Discussion and Conclusion:** Emergency room physicians should be familiar with the EKG patterns that are known as “STEMI/OMI Equivalents.” These include Wellens’ Syndrome, De Winter’s Syndrome, ST elevation in aVR with diffuse ST depression, hyperacute T waves and others. Wellens’ Syndrome, in particular, may present with two distinct patterns with either biphasic T waves (Wellens’ A) or deeply inverted T waves (Wellens’ B) in leads V2-3. Unrecognition of Wellen’s syndrome EKG patterns may not only delay definitive cardiac intervention but lead to inappropriate evaluation methods such as stress testing, contraindicated as it may facilitate acute infarction.

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**Title and Type of Research:** "My Beard Can't Hide This Anymore", Case Study

**Introduction and Background:** Cervical lymphadenopathy is a common presenting complaint to the emergency department and understanding the differential diagnosis is the key to any therapeutic intervention. Presented is a case of chronic, diffuse, painless gross lymphadenopathy in a patient with a history of chronic lymphocytic leukemia (CLL). This case demonstrates one of the deadliest forms of lymphadenopathy, its comorbidities, and examines the role of the emergency physician in differentiating the various causes and care of patients with cervical lymphadenopathy.

**Description:** A 63-year-old male presents to the emergency department with a complaint of enlarging neck masses over the past five months. Patient had a history of CLL with known painless lymphadenopathy to the cervical, axillary, and inguinal regions and had recently grown a beard hoping to hide his neck swelling. PMH was pertinent for hypertension, diabetes, tobacco use, and CLL previously treated with Ibrutinib 420 mg daily but discontinued secondary to gross hematuria. On presentation, the patient was noted to have neck enlargement with palpable matted lymph nodes and reported mild discomfort with swallowing as well as axillary and inguinal lymphadenopathy. Physical examination was otherwise unremarkable. Computed tomography confirmed diffuse cervical, axillary, and inguinal lymphadenopathy in addition to a rectus sheath hematoma. The patient was admitted for oncologic care and management, restarted on Ibrutinib, and ultimately had an uneventful hospital course. In follow up, positron emission tomography confirmed a good response. Subsequent medical noncompliance however, led to repeat hospitalizations for the management of other cancer complications.

**Discussion and Conclusion:** Patients presenting to the emergency department with cervical lymphadenopathy tend to have a benign, self-limited illness. The emergency medical physician should, however, take into consideration a broad differential for etiology. Factors such as size, tenderness, duration, environmental exposures, travel, recent infections, immunity status, and other comorbid conditions are important to consider. Having first contact with the patient, it is imperative that an emergency medicine physician be familiar and anticipate any life-threatening complications such as airway obstruction, effects on the heart and great vessels, and sepsis as well. The emergency medicine physician plays a key role in discerning the cause and appropriate management of cervical lymphadenopathy.

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**Title and Type of Research:** Massive Hematemesis in Metastatic GIST: A Multidisciplinary Approach to Stabilization and Management, Case Study

**Introduction and Background:** Massive hematemesis has many etiologies, including bleeding from the esophagus, stomach, or proximal small bowel. Gastric hemorrhage may arise from sources such as gastrointestinal stromal tumors (GIST). Bleeding can occur in 6-10% of patients with advanced cancer [2]. Additionally, GI hemorrhage is noted to have a high mortality, with 17% all-cause mortality noted in patients with GI bleed and shock [1].

**Description:** The patient is an 84-year-old female with a history of metastatic GIST presenting with large volume hematemesis. She was brought in by EMS air transport following large volume hematemesis estimated to be 1.5 L prior to arrival. She received 1 unit of packed red blood cells (PRBC) and 2 grams of tranexamic acid (TXA) prior to arrival. She arrived stable with only minimal hematemesis. During her stay in the Emergency Department (ED), she had recurrent massive hematemesis, and her vital signs became unstable. She received a total of 10 units of PRBC, 9 units of plasma, and 1 unit of platelets. After resuscitation of her hypotension with blood product administration, she was intubated for airway protection. Computed tomography (CT) imaging was obtained to find any active bleed but yielded no obvious actionable results. Both Gastroenterology and Interventional Radiology were consulted for consideration of endoscopic management and embolization, respectively. She ultimately underwent a splenic artery embolization following an unsuccessful attempt at endoscopic management. She was admitted to the ICU following embolization and was subsequently transferred to the floor. She was discharged home following a 15-day hospitalization.

**Discussion and Conclusion:** This case addresses many concepts relevant to emergency medicine: managing massive hemorrhage, the importance of consultants in management, and goals of care discussions. Upon arrival to the ED prior to clinical decompensation, resuscitation measures were discussed. Having a discussion regarding goals before a patient decompensates is crucial to set precedence for further management. This case highlights the importance of blood product resuscitation in massive hemorrhage. Without blood products in these situations, patients will become unstable rendering further measures futile. Lastly, this case emphasizes the importance of determining management following stabilization, including endoscopic management or transcatheter arterial embolization [3].

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**Title and Type of Research:** Uncovering Fever of Unknown Origin, Case Study

**Introduction and Background:** Branchial Cleft cysts are common causes of congenital neck masses. They comprise approximately ⅓ of all congenital neck masses and are a result of incomplete obliteration of branchial cleft structures during embryogenesis. Fourth branchial cleft cysts are exceedingly rare, comprising only 1-4% of all branchial cleft cysts. [1,2,4] Most cases are diagnosed in childhood but some occur in adulthood. This case presents a patient with bilateral 4th branchial cleft anomalies.

**Description:** This is a 2 year old male with no significant past medical history who presents with new midline neck swelling in the setting of nine days of fever, malaise and cough. Patient with recent two day admission for fever of unknown origin and neck pain. During admission, labs were notable for mild elevation in inflammatory markers, but workup was negative for viral etiologies and he did not meet criteria for Kawasaki disease or MISC. Patient was discharged with close pediatrician follow-up, supportive care and return precautions.

During the evening after he was discharged, the patient developed mild neck swelling. The following day the patient went to the pediatricians office, an ultrasound was done which showed a heterogenous mass, so the family was referred to the Emergency department.

In the ED computed tomography showed a 4.7 cm low-density loculated left neck collection with peripheral enhancement and a small amount of gas likely within the left thyroid lobe, suspicious for a 4th branchial cleft cyst and the presence of gas suggests a fistula to the left piriform sinus.

An otolaryngologist was consulted. Patient was started on antibiotics. The following day the patient was taken to the operating room for incision drainage of the 4th branchial cleft cyst with cauterization of the bilateral 4th branchial cleft sinuses.

**Discussion and Conclusion:** Fourth branchial cleft cysts are a rare but important cause of neck masses in children. They can present with nonspecific symptoms, and are often not considered on the differential diagnosis. Imaging, particularly CT and ultrasound, plays a crucial role in confirming the diagnosis and guiding treatment. Surgical treatment, with cauterization is less invasive and allows for quicker recovery with less complications.

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**Title and Type of Research:** Telecommunicator CPR Performance Metrics and Barriers to Implementation in Birmingham, Alabama, Original Research

**Introduction and Background:** Bystander cardiopulmonary resuscitation (B-CPR) rates in Birmingham, Alabama are 2.6 times below the national average, and neurologically intact survival rates following out-of-hospital cardiac arrest (OHCA) are among the lowest in the U.S. at just 1.3%. Telecommunicator CPR (T-CPR) instruction is a proven, cost-effective strategy to improve layperson B-CPR rates. However, current T-CPR practices in Birmingham are unknown.

We sought to evaluate existing T-CPR practices in Birmingham, identify barriers to universal implementation, and compare performance metrics to national guidelines.

**Methods:** We conducted a retrospective analysis of consecutive 9-1-1 calls for all adult (age ≥18 years) non-traumatic emergency medical services-treated OHCA in Birmingham between 1/1/2023 and 12/31/2023. Cases were excluded if the OHCA occurred after Emergency Medical Services arrival or if the events took place in a healthcare setting or correctional institution. 9-1-1 audio recordings were individually reviewed to extract the T-CPR data elements for the Cardiac Arrest Registry to Enhance Survival. Descriptive statistics were employed to analyze the data and compare to the American Heart Association’s (AHA) T-CPR quality and process metrics.

**Results:** Of the 236 OHCA cases that met inclusion criteria, 94 (39.8%) were correctly recognized by the call taker (AHA goal: >75%). Among quality improvement recognizable cases, 49.7% were correctly identified (AHA goal: >95%) with a median time to recognition of 89.4 seconds (IQR: 48.8–60.5; AHA goal: < 90 seconds). While only 30.8% of T-CPR-eligible calls received CPR instructions (AHA goal: >75%), 97.9% of those who received instruction performed B-CPR, with a median time to first chest compression of 202 seconds (IQR: 140–240; AHA goal: < 150 seconds). CPR instruction was refused by 6 (8.5%) callers when T-CPR was attempted. Common barriers to recognition included the assessment of breathing and reports of potential seizure activity.

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**Title and Type of Research:** "One Tail, Two Tales", Case Study

**Introduction and Background:** When a snake-bitten patient presents to the Emergency Department, many factors should be considered in providing timely and appropriate, cost-effective care. Correct identification of the snake species is one critical initial step. Due to their close similarities in appearance, misidentification of the juvenile Agkistrodon genus of snakes is not uncommon and may be associated with an increase in morbidity and mortality. Two cases of the most commonly confused juvenile Agkistrodon snakes (Agkistrodon contortrix contortrix and Agkistrodon piscivorus conanti) envenomations are presented to demonstrate how to achieve an accurate identification and proper management nuances.

**Description:** Case1:

A 60yo male presents to the ED complaining of great toe pain 20 minutes post a “small brown snake bite”. Killed with a shovel, he recovered the tail (figures presented). Physical examination was unremarkable save for anxiety and two puncture wounds noted on the dorsomedial right great toe and edema spreading to the dorsal foot. Laboratory studies including CBC, CMP, Coagulation studies, CPK, and urinalysis were within normal limits. The snake was properly identified as a juvenile southern copperhead (Agkistrodon contortrix contortrix). After administration of four vials of Crotalidae Polyvalent Immune Fab, the patient was admitted with an uneventful hospital course.

Case 2:

A 37yo male was transferred from a rural (level three trauma) emergency department for evaluation and management of a “juvenile copperhead” snake bite to the finger. The patient had decapitated the snake and brought the body to that facility. He was administered four vials of Crotalidae Polyvalent Immune Fab to address edema and moderate pain to the distal right index finger. By arrival to USA Medical Center, the patient had developed increasing pain and nausea, as well as hemorrhagic bullae at the bite site and edema spreading to the proximal forearm. Laboratory evaluation revealed elevations in the white blood cell count and creatine phosphokinase. After correctly identifying the snake as a juvenile Florida cottonmouth (Agkistrodon piscivorus conanti) the patient would require an additional four vials of antivenom for initial control then six for maintenance. The patient was discharged after a three day hospital course with no permanent sequelae.

**Discussion and Conclusion:** Emergency Medicine physicians should be equipped to accurately identify all of their regional venomous snake species as this may affect patient care. Recognition of a venomous snake especially of the juvenile forms of the Agkistrodon class of Crotaline snakes can be challenging as they all have lime -green or yellow colored tails and possess other similarities in pattern. Differentiating between such snakes as the southern copperhead (Agkistrodon contortrix contortrix) and a Florida cottonmouth (Agkistrodon piscivorus conanti) highlight their various toxicities and the specific therapeutic options that an emergency medicine physician may have for patient care. Proper identification of a snake species promotes a more cost-effective approach to the utilization of resources, including the use of antivenom, and may impact overall outcome and hospital length of stay.

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**Title and Type of Research:** Thrombotic Complications in Whippets Use- a novel case presentation, Case Study

**Introduction and Background:** Nitrous oxide (N2O) is an inorganic chemical molecule which has been used since the 18th century for its analgesic, anxiolytic, and euphoric properties. Recreation use is increasing in popularity due to low cost and wide availability. There are well-documented side effects of N2O-induced cobalamin deficiency and subacute combined degeneration, but more obscure risk of hypercoagulability and venous thromboembolism. This report highlights thrombotic complications after chronic recreational use of N2O.

**Description:** A 30-year-old male with history of GERD and vitamin B12 deficiency presented to the emergency department with presyncope. Patient was attempting to increase his mobility after a metatarsal fracture, when he felt acutely dizzy with palpitations and bilateral lower extremity numbness. He reported recreational use of whippets for months. On arrival, he was tachycardic to 130bpm, hypertensive 143/103, spO2 100% on room air. Physical exam remarkable for right calf tenderness. Workup revealed elevated d-dimer at 2,175 ng/mL (0-240ng/mL) and CTA chest showed bilateral segmental and subsegmental pulmonary embolism with no right heart strain. Bilateral lower extremity US revealed posterior tibial occlusive DVT. He was placed on a heparin drip and transitioned to apixaban for three months with resolution of PTE. Hypercoagulable workup revealed elevated homocysteine of 82.5mcMol/L (reference 5-15mcMol/L) and cobalamin deficiency of 153pg/mL (reference 180-914pg/mL) which had both resolved at one-month follow up.

**Discussion and Conclusion:** There are very few reports of thromboembolic complications after nitrous oxide but these may be underreported. This patient had reduced mobility following his metatarsal fracture, although still ambulatory, and had no other risk factors for thromboembolic disease. Vitamin B12 is necessary for the conversion of homocysteine to methionine via methionine synthase, and a deficiency allows for accumulation of homocysteine, which may have a prothrombotic effect. There are documented cases of N20-associated acute massive PTE, complete right R MCA occlusion, saddle PTE requiring pulmonary endovascular thrombectomy, basilar artery thrombosis requiring thrombectomy. There is weak evidence whether supplementation with folic acid, vitamin B12, and vitamin B6 may reduce the incidence of recurrent thrombosis. Clinicians should have a high index of suspicion to evaluate for neurovascular events in young patients who use Whippets.

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**Title and Type of Research:** Man with "Down and Out" Eye, Case Study

**Introduction and Background:** Palsy of the third cranial nerve (CN III) has a variety of etiologies, ranging from trauma and tumors to stroke and aneurysm. One classic, yet ominous, etiology of a CN III palsy is aneurysm of the posterior communicating artery (PCOM), in which CN III compression causes both autonomic and motor deficits that produce a blown pupil and a “down and out” gaze, respectively. PCOM aneurysm is a potentially life-threatening condition requiring prompt recognition, evaluation of rupture status, and neurosurgical intervention to minimize possible neurological deficits, rupture, or death. Given the association between PCOM aneurysm and CN III palsy, a new CN III palsy should raise suspicion for compressive pathologies like aneurysm.

**Description:** This case report describes a 35-year-old male who initially presented to an outside hospital with acute onset right retro-orbital headache, ptosis, diplopia, and mydriasis. He was diagnosed with migraine headaches and discharged after an unremarkable non-contrast computerized tomography scan (CT) of the head. The patient later presented to our emergency department with worsening headache, ptosis, diplopia, and impaired movement of his right eye. Subsequent head CT angiography (CTA) showed an unruptured aneurysm at the junction of the right PCOM and internal carotid artery (ICA) that was treated with right craniotomy and clipping.

**Discussion and Conclusion:** This case highlights the importance of considering compressive pathologies like aneurysm, performing a thorough history and neurological exam, and employing appropriate diagnostic imaging modalities in the context of a new, unexplained CN III palsy. Loss of function of CN III leads to unopposed lateral rectus, superior oblique, and sympathetic influence on the eye, producing ptosis, diplopia, and a dilated, non-accommodating pupil with a “down and out” gaze (1). Given the association between PCOM aneurysm and CN III palsy, a new CN III palsy should raise suspicion for compressive pathologies like aneurysm (2). Even pupil-sparing or otherwise partial CN III palsies may be caused by cerebral aneurysm (3,4). CT without contrast is not an adequate modality to rule out or diagnose unruptured cerebral aneurysms (5,6). CTA and MRA are the first-line diagnostic imaging modalities for cerebral aneurysms in the emergency department setting (5).

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**Title and Type of Research:** Impending Airway Compromise from an Expanding Neck Hematoma, Case Study

**Introduction and Background:** Airway compromise and cardiovascular collapse due to a rapidly expanding neck hematoma are feared complications in emergency medicine. Early identification during physical examination, along with adjuncts such as point-of-care ultrasound (POCUS) and fiberoptic laryngoscopy (FOL), are crucial for timely diagnosis. Although rare, emergent incision and drainage is a life-saving procedure that emergency physicians must be prepared to perform. We present a case of impending airway compromise in an elderly male patient on anticoagulation therapy who underwent an unknown surgical procedure at an outside hospital.

**Description:** A 66-year-old male with a history of rivaroxaban use presented to the Emergency Department with acute dyspnea, two weeks after undergoing an unknown surgical procedure on his left anterolateral neck. On examination, the patient appeared critically ill, exhibiting respiratory distress, tracheal deviation, and hypotension. Bedside POCUS revealed a large fluid collection in the soft tissues of the neck, while fiberoptic laryngoscopy did not show any supra- or subglottic mass. An emergent hematoma incision was performed at the bedside, resulting in an immediate improvement in symptoms without the need for intubation. The patient was subsequently taken to the operating room, where a left internal jugular vein defect was identified and repaired by ENT specialists. The patient was discharged in good condition on postoperative day two.

**Discussion and Conclusion:** Rapidly expanding neck hematomas are a life-threatening condition, often seen in the ED following penetrating trauma, blunt trauma, or, as in this case, postoperative complications (1). Symptoms may vary, initially presenting as neck swelling, and later evolving to dyspnea, dysphagia, and tracheal deviation (2). POCUS, FOL, and radiographs are key diagnostic tools in managing these cases. However, a multimodal approach may be necessary when visualization is hindered by open wounds, subcutaneous emphysema, or overlying hematoma (3). Airway compromise is a major concern and may require hematoma incision and drainage, fiberoptic intubation, or surgical cricothyroidotomy (4). Rapid recognition and assessment, combined with high-acuity, low-occurrence (HALO) procedures, are essential for the timely management of this life-threatening condition.

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**Title and Type of Research:** Prevalence and associated factors of burnout & work-place stressors among Emergency Department healthcare workers in Uganda., Original Research

**Introduction and Background:** Burnout is a common occupational phenomenon, with Emergency department (ED) healthcare workers worldwide facing an elevated risk. However, there is a scarcity of data on the burden of burnout among ED staff, especially in Uganda. Our study sought to establish the prevalence and factors associated with burnout and work place stressors among medical and nursing healthcare workers in EDs of multiple hospitals in Uganda.

**Methods:** An online-based survey was be conducted among ED staff and trainees of 4 private and public hospitals. Burnout was be assessed using the Maslach Burnout Inventory – Human Services Survey (MBI - HSS) tool. Univariate and logistic regression analyses were performed to analyse the data, considering statistically significance at p<0.05.

**Results:** A total of 82 participants were analysed, with the majority being female and providing care to both adult and pediatric patients. Mostly respondents (61%) worked in public facilities. Overall, 9.7% of participants met the criteria for burnout, with 40 (48.7%) reporting high emotional exhaustion, 18 (21.9%) high depersonalisation, and 29 (35%) low personal accomplishment. At least 80% of participants identified key ED stressors including work-related fatigue, patient economic problems, patient overload, equipment shortages, challenges in balancing professional and personal life. Individuals who reported stressors of poor communication with colleagues in the ED and caring for the old and terminally ill, had significantly higher odds of experiencing burnout (90% vs 87%), which was consistent across the depersonalisation domain of burnout.

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**Title and Type of Research:** Satisfaction of patients with Emergency Care services received in Sub-Saharan Africa: A systematic review, Original Research

**Introduction and Background:** Patients satisfaction with emergency care (EC) services is a rapidly expanding area of research for healthcare policy leaders in emergency medicine. However, there’s a paucity of data addressing satisfaction of patients with EC in Sub-Saharan Africa (SSA).

Objectives:

1. To identify how satisfaction of patients that seek emergency care has been measured in sub-Saharan Africa.

2. To explore areas that patients have noted as being satisfied and dissatisfied with the Emergency care services received in sub-Saharan Africa.

3. To assess the impact of identified interventions for the delivery of patient satisfying emergency care in Sub-Saharan Africa.

**Methods:** Databases: Web of Science, Scopus, PubMed, Medline, CINAHL, Google Scholar, Embase, were searched for all the papers available in the databases from inception up to 31 July 2021 using the same MeSH terms and text word search. We also hand-searched bibliographies of the included studies where necessary. The JBI Critical appraisal checklists were used to assess the validity and reliability of eligible studies. We summarized key study findings and methodologies in tables. Systematic Review registration: PROSPERO – [CRD42021278411]

**Results:** 25 studies met the inclusion criteria of which, 16 (63%) of the studies were carried out in the adult and paediatric accidents and emergency departments. 14 (56%) studies were from public facilities. Most studies were non-interventional (23/25) and came from mainly Nigeria, Ghana, Ethiopia, & Tanzania. Patient satisfaction with general emergency care ranged from 33 to 93% on numeric scales and low to high on ordinal scales. Patients were mostly satisfied with courtesy of health workers. Areas of dissatisfaction and recommendations for change were majorly service and process of care factors including timeliness of care, health information delivery, patient privacy, and state of the ED environment. All identified interventions improved patient satisfaction with EC received.

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**Title and Type of Research:** UAB Prehospital Whole Blood Administration, Case Study

**Introduction and Background:** Severe hemorrhage remains a leading cause of preventable death among trauma patients, making timely intervention critical for survival. Traditional prehospital care by Emergency Medical Services (EMS) has primarily focused on crystalloid fluids and rapid transport, but these methods often fail to adequately address acute blood loss. The integration of blood products into prehospital protocols signals a significant shift aimed at enhancing hemodynamic stability prior to hospital arrival, ultimately improving patient outcomes. Evidence suggests that administering blood products by EMS is feasible, safe, and effective, prompting a reevaluation of operational protocols in prehospital trauma care.

**Description:** A 30-year-old male sustained multiple gunshot wounds to the abdomen. The patient was discovered outdoors with evidence of significant blood loss. Initially hypotensive with a weak pulse, vital signs were BP 85/50, pulse 112, respirations 12. After primary assessment, the patient was placed on oxygen via non-rebreather mask and a 3-lead ECG was obtained. While initially minimally responsive, the patient became more alert following a sternal rub and IV placement. Inferred consent was obtained, and one unit of O-positive whole blood was administered. Post-transfusion, the patient’s condition improved with vital signs stabilizing, BP 104/60, pulse 98, respirations 16 just prior to arrival to the ED. Subsequently, the patient was transfused two additional units of blood in the ED, survived hospitalization, and was discharged without complications.

**Discussion and Conclusion:** The administration of prehospital blood products has repeatedly demonstrated improved outcomes for trauma patients, particularly in military studies, showing reduced mortality rates. Evidence supports the effectiveness of prehospital transfusions, especially within the critical "golden hour," with whole blood becoming increasingly recognized in U.S. protocols. However, the benefits seem less pronounced in urban environments with swift access to trauma centers. While the data is promising, further randomized controlled trials are necessary. Current findings indicate that trained EMS personnel can safely implement blood products in high-acuity situations, with appropriate utilization and awareness of potential post-transfusion complications being essential. Both established evidence and early BFR data suggests that it is both feasible and beneficial for civilian EMS systems to carry and administer blood products; however, large-scale adoption and implementation faces logistical and cost-related challenges.

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**Title and Type of Research:** Malignancy as the underlying cause of cardiac tamponade, Case Study

**Introduction and Background:** Cardiac tamponade is a life-threatening emergency caused by fluid accumulation within the pericardium, which can potentially lead to shock and death if untreated. Point-of-care ultrasound (POCUS), is a valuable tool for rapid diagnosis of tamponade. It allows for real-time visualization of pericardial effusions and the assessment of hemodynamic signs, such as right ventricular diastolic collapse and a non-collapsible IVC, which can indicate impending tamponade.

**Description:** A 58-year-old male with PMH of hypertension from Singapore presented with two weeks of worsening shortness of breath, orthopnea, dry cough, and syncope. On arrival, his blood pressure was 100/60, tachycardic to 103, and crackles were noted bilaterally. CXR showed cardiomegaly with mild pulmonary edema.

POCUS showed a very large circumferential, anechoic pericardial effusion with evidence of a “swinging heart” and findings concerning for impending tamponade. The ultrasound images showed right ventricular diastolic collapse and a plethoric IVC. The patient's EKG demonstrated electrical alternans.

The patient underwent emergent pericardiocentesis with cardiology, with 1200 mL of serosanguineous fluid removed. Cultures were unremarkable except for presumed contaminants; other infectious tests including tests for mycobacterial infection were negative. CT abdomen/pelvis showed sclerotic lesions in the lumbar spine and pelvis that were concerning for metastatic prostate cancer although no definitive diagnosis was made prior to discharge. Though rare, the patient's tamponade was likely secondary to newly diagnosed metastatic disease. The patient was discharged after 8 days to return to Singapore with plan for further metastatic workup.

**Discussion and Conclusion:** Though rare, malignancy can be the underlying cause of cardiac tamponade. Even earlier is initial diagnosis of metastatic disease tamponade was largely only case reports documenting such.1 Cancers most often attributed to pericardial effusions and possible tamponade include lung cancers, breast cancers, malignant melanoma, and leukemia and lymphoma.2 Key findings of pericardial tamponade include RV diastolic collapse, non-collapsible IVC, and significant respiratory variation on Doppler. This patient had evidence of right ventricular diastolic collapse, the most specific echocardiographic sign of pericardial tamponade. Our patient's tamponade was likely secondary to underlying malignancy with our patient foregoing further workup until home in Singapore.

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**Title and Type of Research:** Man with shortness of breath, Case Study

**Introduction and Background:** A 33-year-old male presented to the emergency department complaining of acute onset shortness of breath that awoke him from sleep with associated chest pain and productive cough. Patient endorsed recent sick contact via his daughter who had an upper respiratory illness. Physical exam notable for tachypnea, right-sided wheezing, erythematous oropharynx and crepitus along supraclavicular area.

**Description:** Chest x-ray and computed tomography (CT) of chest obtained with moderate volume pneumomediastinum extending into neck soft tissues and extrapleural space and mild diffuse bronchial wall thickening, concerning for acute bronchitis. Thoracic surgery consulted, recommending barium swallow study, which had no evidence of esophageal injury or leak. Patient admitted overnight to the intensive care unit for close monitoring and discharged the next day.

**Discussion and Conclusion:** Spontaneous pneumomediastinum represents approximately 1 in 30,000 emergency department visits1. Etiologies include blunt trauma, iatrogenic causes, intrinsic pulmonary pathology, esophageal or bowel rupture, or childbirth2. This case demonstrates pneumomediastinum in the setting of acute bronchitis due to the Macklin Effect. The Macklin Effect describes a specific pathophysiology of pneumomediastinum where an alveolus ruptures, releasing air that dissects along bronchovascular sheaths and tracts to the hilum along a pressure gradient and eventually spreads into the mediastinum and through the fascia planes, often into the neck3. While the Macklin Effect is typically seen in blunt chest trauma or mechanical ventilation in the setting of ARDS, this case demonstrates alveolar rupture likely related to increased pressures from coughing in the setting of acute bronchitis. Diagnosis of pneumomediastinium is confirmed through imaging such as chest x-ray or CT scan; 30% spontaneous pneumomediastinum will have normal chest x-ray2. Unlike pneumothorax, pneumomediastinum treatment is generally conservative involving rest, analgesia, and monitoring as the air is usually reabsorbed by the mediastinal tissues typically within 1-2 weeks4.

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**Title and Type of Research:** Syphilis Screening in the Emergency Department: Racial Disparities Underscored, Original Research

**Description:** An automated system was developed to trigger a treponemal antibody (Ab) lab on any ED patient with a history of prior STI within 12 months of ED visit (determined by prior laboratory result in the electronic medical record) or a chief complaint or reason for visit suggestive of an STI or pregnancy. Lab ordering, completion incidence, results, and subsequent interpretation were monitored. Patients determined to have active syphilis, linkage was tracked and basic demographics were obtained.

**Discussion and Conclusion:** Results: In the three month project period reviewed, 746 automated treponemal Ab labs were ordered. 580 labs were obtained (77.7%), 9.7% were Ab positive and 5.0% were subsequently interpreted as consistent with active syphilis; to-date, 82.8% have successfully linked to care. Among confirmed active cases, 79.3% were Black compared to 10.3% white and 10.3% Hispanic. Among Black active cases: 52.2% were female and 47.8% were male; age ranged from 18 to 81; 30.4% were aged 25-34; 43.5% were privately insured, 26.1% were publicly insured and 30.4% were uninsured. 30.4% of cases were consistent with secondary or tertiary syphilis. Of 22 eligible for treatment linkage, 19 (86.3%) have successfully linked to definitive care. Conclusion: Focused, automated, risk-based syphilis testing in the ED setting is feasible and identifies an incidence of active syphilis infection much higher (> 10x) than that seen in the general population. This cohort underscores the racial disparity that exists in syphilis incidence (>7.5x Blacks as compared to whites in this sample). Active syphilis identified by this type of screening can result in successful linkage to definitive treatment.

**Introduction and Background:** Introduction: Since an historic low in 2000-2001, the US has recently seen a rise in syphilis incidence. Racial disparities have previously been noted in syphilis rates; the reported case rate among African Americans is 4 to 5 times the rate among whites. Emergency departments (EDs) have been proven to be a valuable setting for public health screening and treatment linkage for sexually transmitted infections (STIs). This project considers the early results of a focused, ED-based, automated syphilis screening in the context of known racial disparities.

**Methods:** Methods: An automated system was developed to trigger a treponemal antibody (Ab) lab on any ED patient with a history of prior STI within 12 months of ED visit (determined by prior laboratory result in the electronic medical record) or a chief complaint or reason for visit suggestive of an STI or pregnancy. Lab ordering, completion incidence, results, and subsequent interpretation were monitored. Patients determined to have active syphilis, linkage was tracked and basic demographics were obtained.

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**Title and Type of Research:** Acute Strangulated Hernia in an Adult Male, Case Study

**Introduction and Background:** An estimated 5% of the general population will develop a hernia within their lifetime, with approximately 1% to 3% of hernias becoming subsequently strangulated/incarcerated. When strangulation does occur, it is considered a surgical emergency due to risk for ischemia progressing to bowel necrosis and ultimately perforation. Identifying and correctly evaluating hernia’s for potential risk of strangulation is key to timely intervention and reduction in patient complications and mortality.

**Description:** Patient is a 72-year-old M with PMH of HTN, T2DM, CAD, mitral valve stenosis, and cirrhosis who presented to the ED after 24 hours of crampy abdominal pain. Patient stated that he had an umbilical hernia for many years that was larger the morning of admission and could no longer be easily reduced. The patient denied fever, chills, nausea/vomiting, but endorsed crampy localized abdominal pain surrounding the hernia that by early afternoon of the date of admission had become diffuse with the hernia developing overlying skin darkening and increasing in size. Patient was passing flatus and endorsed regular bowel movements the morning before onset of abdominal pain. He had an extensive history of abdominal surgery including an exploratory laparotomy 20 years prior due to a perforated duodenal ulcer, an appendectomy, and a cholecystectomy.

Pt arrived vitally stable, but hypertensive. Upon physical examination, the patient was visibly uncomfortable with labs notable for chronic changes consistent with cirrhosis and a lactate of 1.6 concerning for tissue ischemia but without leukocytosis present. CT abdomen pelvis revealed an umbilical hernia containing loops of bowel with wall-thickening, upstream small intestinal fluid levels, and downstream small intestinal compression. Emergency general surgery was consulted and the patient deemed a candidate for emergent surgical intervention.

**Discussion and Conclusion:** Timely differentiation of incarcerated versus reducible hernias is essential for maximizing outcomes. Red flags when evaluating a hernia for potential strangulation include irreducibility, overlying skin changes, nausea/vomiting, obstipation, and acute pain. Lactate levels greater than 1.46mg/dl in patients with suspected small bowel incarceration have been shown to have high sensitivity and specificity for need for urgent surgical intervention.

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**Title and Type of Research:** Pheocromocytoma, Case Study

**Introduction and Background:** Pheochromocytomas are rare neuroendocrine tumors arising from chromaffin cells of the adrenal medulla. These tumors secrete catecholamines, and therefore often present with headaches, palpitations, diaphoresis, and hypertension. Urine positive for catecholamines is diagnostic, and treatment is surgery after alpha- and beta-blockade optimization.

**Description:** 17-yo AA-M with a recent diagnosis of hypertension presented to the ED following home blood pressure (BP) readings of 180/130. He had been experiencing episodes of night sweats, flushing, headaches, blurry vision, and palpitations. On physical examination he had an elevated BP at 169/102 with diaphoresis, with an otherwise benign exam. Labs were significant for hypokalemia, leukocytosis, with mildly elevated TSH with normal free thyroxine. Serum metanephrines and normetanephrines were greater than 3000 pg/mL. CT abdomen/pelvis with contrast showed a 5.3 cmx 5.8 cm x 3.3 cm mass behind the pancreas, which was highly vascular, heterogenous in appearance with suspected areas of necrosis. The patient was admitted to PICU and stabilized, then discharged for outpatient surgical planning.

**Discussion and Conclusion:** Pheochromocytomas are rare neuroendocrine tumors arising from chromaffin cells of the adrenal medulla. Some pheochromocytomas arise outside the adrenal glands, also known as “catecholamine-secreting paragangliomas.” While clinically the distinction is negligible, it is important for further genetic workup. The classic triad of symptoms includes episodic headache, diaphoresis, and palpitations. Pheochromocytomas usually present in patients 40-50. The diagnostic standard for pheochromocytoma is confirmation of catecholamine hypersecretion through 24-hour urinary fractionated catecholamines and metanephrines or through plasma fractionated metanephrines. Elevations in normetanephrine >900 mcg/24 hours or metanephrines >400 mcg/24 hours are suspicious for pheochromocytoma, and advanced imaging with CT or MRI should be obtained.

Definitive treatment for pheochromocytoma is surgical resection. However, surgery is not performed in the acute setting; instead, preoperative optimization with alpha blockade, such as phenoxybenzamine, is essential to mitigate intraoperative hemodynamic instability. Beta-blockers are added after alpha blockade to control reflex tachycardia. After resection, long-term follow-up is crucial due to the risk of recurrence and the potential for hereditary syndromes. 30–40% of pheochromocytomas are associated with genetic syndromes such as MEN type 2, Von Hippel-Lindau syndrome, and Neurofibromatosis type 1. Genetic testing is recommended, especially in younger patients.

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**Title and Type of Research:** Cerebral Air Embolism with Delayed HBOT and Full Neurologic Recovery, Case Study

**Introduction and Background:** Hyperbaric oxygen therapy (HBOT) remains the standard of care for air embolisms. Treatment with HBOT in a timely manner is ideal but delays in care are inevitable. We present a case of delayed HBOT secondary to limited access to facilities with full resolution of patient’s symptoms following one session of HBOT.

**Description:** The patient is a 78-year-old female who was transferred to the ED due to altered mental status after a CT-guided lung biopsy. The patient was unresponsive upon completion of biopsy but later became responsive with agitation. CT head without contrast performed at that time revealed significant findings of air within the cortical veins, dural sinuses, orbital and facial veins, suggesting air embolism. The patient was also found to have a small basilar right pneumothorax following the procedure. Upon arrival to the ED, she was hemodynamically stable and afebrile. She was placed in Trendelenburg and on HFNC. She was alert and oriented to self only with confusion, agitation, and intermittent left upper extremity jerking movements with eye deviation concerning for seizure-like activity. The patient was given 2 mg Ativan four times and loaded with Keppra with resolutation. The process for transfer to a facility with hyperbaric oxygen was initiated promptly, with complicating factors including inclement weather and pneumothorax s/p thoracostomy. The patient continued to maintain her airway with no further change in neurological examination during this process. The patient was then accepted to an out-of-state facility in Tennessee 10 hours after symptom onset after multiple attempts at transfer were made. The patient was electivty intubated before transport and placed on propofol. The patient required levophed briefly to maintain appropriate MAPs at the accepting facilty. HBOT began at 11:11 am the following day - 24 hours after symptom onset. She completed one US Navy Treatment Table 6 with extensions at the 60 fsw level. She was successfully weaned off pressors and extubated one day after HBOT. Following sedation wean, she was found to have a full neurological recovery 24 hours after the completion of HBOT.

**Discussion and Conclusion:** Cerebral air embolism occurs when air enters the intravascular space. This is a rare complication following invasive medical therapies. Its presentation can range from asymptomatic to catastrophic neurological deficits with its effects being comparable to those in TIAs and embolized blood clots. Initial treatment of cerebral air embolism includes placing the patient in lateral decubitus or Trendelenburg position, ensuring adequate oxygenation with FiO2 to increase the gradient for nitrogen and possibly decrease the size of the embolism, treating seizures, and intravenous fluids to prevent hemoconcentration. Definitive treatment is HBOT. Ideally, this should be within 6 hours of onset. Our patient received treatment 24 hours after presentation with a good outcome. The delays in HBOT are inevitable and can be due to limited access to facilities, the need for out of state transfer, and inclement weather. However, even if there is a delay in HBOT for reasons stated above, patients may still have full recovery up to 24 hours after a delay in HBOT.

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**Title and Type of Research:** Emergency Department Gaps in Alcohol Use Disorder Treatment in the Deep South: Evaluating Medication Prescribing Practices, Original Research

**Introduction and Background:** Emergency departments (EDs) have historically only treated alcohol use disorders (AUDs) through symptomatic management of withdrawal symptoms. If patients are not considered to be too high-risk to be admitted, they often get discharged with community resources. However, EDs are often the best/only access for marginalized patients including those suffering from addiction. Programs in Oakland, California, University of California in San Francisco, coast have shown that medications for AUD (MAUD) prescribed from the ED have shown success in decreasing alcohol consumption. However, these are very different environments compared to other parts in the United States such as in the Deep South.

**Methods:** Objective

With the goal of setting up an ED-Based AUD Treatment program in the deep south, the goal of this study is to assess prescribing practices of emergency providers for patients with AUD in a hospital system in the Deep South.

**Results:** A retrospective chart review was performed by a single reviewer of a 2-month sample of 2022 (April-May) was conducted, with 242 samples of 3394 patients in central Alabama, servicing a mix of urban and rural settings. Cerner electronic medical record was used.

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**Title and Type of Research:** Accuracy of Physician In Triage Predictions on Hospital Admission and Length of Stay, Original Research

**Introduction and Background:** Physician In Triage (PIT) systems involve a physician conducting an initial evaluation and ordering diagnostic testing while the patient is in triage in the emergency room. Ideally, these systems improve the speed of patient care, especially with lower acuity concerns. Our study evaluated the accuracy of the triage physician's initial prediction of a patient’s length of stay in the ED and their likelihood of being admitted. Current literature demonstrates improved door-to-provider time, improved patient satisfaction, and reduced amount of time occupying ED beds with PIT systems in the emergency department. The ability of triage physicians to predict whether a patient will be admitted has been scantly investigated. Our research provides data about the accuracy of PIT at the University of Kentucky’s Chandler Hospital.

**Methods:** Seven physicians working in the emergency department were surveyed on 13 total occasions about their predictions on triage patients’ length of stay (LOS) and admission status. Patient records were then accessed to compare the physician’s prediction to the actual LOS and whether the patient was truly admitted or not. Data was de-identified and analyzed to determine the accuracy of the physician predictions, along with differences in ability to predict for patients of different ages and sex.

**Results:** The average length of stay in the emergency department was 6.11 hours. The accuracy admissions predicted correctly was 77 percent, with a sensitivity of 87.1 percent and specificity of 73.5 percent. The average difference between predicted LOS and actual LOS was 2.23 hours. 12.9 percent of LOS predictions were within 30 minutes of the actual LOS (n=13). There was no statistical difference between average length of stay for males versus females, or between age groups.

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**Title and Type of Research:** Patient Preferences for Emergency Room Physician Attire, Original Research

**Introduction and Background:** Prior studies have shown that physician attire influences patient trust and satisfaction, with many patients favoring formal dress. However, while several studies have illuminated this trend, the chaotic environment of the emergency department presents a unique clinical setting, and patient preferences for physician attire in this area remain somewhat opaque. We hypothesized that patients would prefer formal attire in the emergency room, and that age, gender, education level, and model gender may modulate this preference.

**Methods:** To examine our hypothesis, a cross-sectional observational study was conducted. A convenience sample was obtained via voluntary survey distributed to patients and their companions at the University of Kentucky ED in Spring of 2023. 105 respondents elected to complete the survey. Patient age, gender, and education level were collected. Respondents were shown a male and female model, each wearing eight different outfits, and asked to answer which doctors met their expectations, were trusted, and were least desired for care.

**Results:** Of the respondents, roughly half were patients. The median age was 37 years. More respondents agreed than disagreed that ER physician attire was important. For both the male and female models, outfits with white coats as well as full scrubs were the most trusted, expected, and least often rejected for care. The less formal outfits had the worst patient responses. On Chi-squared analysis, there was a significant relationship (p < 0.001) between the outfits and the respondents’ answers for each of the three measures.