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➢ **Category:** Emergency Medical Services & Pre-hospital Care

**ID: 201 - Physician Attitudes on Integration of Prehospital Patient Care Report into Hospital Medical Record**

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**Abstract:**

Introduction: Pre-hospital information is a valuable resource that is often under-utilized by physicians. In both the emergency and inpatient settings, information about a patient's condition prior to their arrival at the hospital is fundamental to creating an optimal care plan. Historically, there has been no integration between pre-hospital providers' electronic patient care reports (ePCR) and the receiving hospital's electronic medical record (EMR). This study aims to assess provider attitudes towards the ePCR and patient care decisions before and after the integration of the ePCR and hospital EMR system. We hypothesize that this integration will cause an increase in accessibility and thus utilization of pre-hospital ePCR in patient care decision-making.

Methods: In 2023 our local academic health center implemented software that allowed pre-hospital documentation to be available to hospital staff within 30 minutes of patient arrival to the emergency department. Before the implementation of this new system, attendings, fellows, and residents from both emergency and internal medicine departments were surveyed on their current attitudes and behaviors regarding ePCR and clinical practice. The same survey was administered 6 months after implementation and responses were compared using a Wilcoxon signed-rank test.

Results: 66 physicians responded to the pre-survey including 39 (59.1%) from the emergency medicine (EM) department and 27 (40.9%) from the internal medicine (IM) department. 52 physicians completed the post-survey, including 33 (63.5%) EM physicians and 19 (36.5%) IM physicians. Change in rank was significant ($p<0.01$) for the following categories: knowledge of accessing the ePCR, ability to access the ePCR, ease of accessing the ePCR, time to access the ePCR, and frequency of accessing the ePCR. Change in rank was insignificant for: importance of ePCR in patient care, importance of ePCR in medical decision making, assessment of whether the ePCR would be used more frequently if it were easier to access.

Conclusion: Pre and post survey responses regarding accessibility did exhibit a significant change in rank, while the importance of the ePCR on clinical decision-making did not differ significantly. This suggests that while system integration increased accessibility to pre-hospital information, it did not significantly alter patient care decision making by in-hospital physicians.

➢ **Category:** Education & Post-Graduate Training

**ID: 253 - An International Course for Emergency Physicians: Advanced Procedural Skills Using Fresh Cadavers**

**Authors:** Ahmad Nama[1] *(Presenting)*, Jacob Assaf[1], Peter Vernon van Heerdan[1], Evan Avraham Alpert[2], Sharon Alter[2], Bala Miklosh[1], Stephen Ledot[1], Aliza Goldman[2], Jim Connolly[3], Tural Alekberli[4], Ashley Mattheis[5], Mohan Koppuravuri[6], Joseph Offenbacher[7], Elod Macsai[8], Thiagarajan Jaiganesh[9], Venkat Kotamraju[10], Marije Bakker[11], Mark Rezk[12], Debra West[13], Christopher Yap[14]

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**Abstract:**

Introduction: Emergency medicine practice requires mastery of critical procedures that are infrequently performed. Simulation-based education with mannequins has greatly enhanced the learning and practice of these skills. Nonetheless, mannequins have significant limitations, including variances in anatomical, tactile, and ultrasonographic features compared to the human body. Fresh cadavers provide unparalleled realism, providing genuine human anatomy that can be manipulated for educational use. Unlike embalmed cadavers, fresh cadavers lack preservatives and air, enabling high-quality sonographic images, ideal for ultrasound-guided procedures. These models represent human anatomy far more realistically than mannequins. We present the Advanced Emergency Medicine Interventional Skills (AEMIS) course, using fresh cadavers to enhance procedural skills in emergency medicine.

Methods: The course, affiliated with Hadassah Medical Center, Jerusalem, Israel, was a 2-day CME-accredited course, conducted at Charles University in Prague, Czechoslovakia, in September 2024. The course included faculty with specialties in critical care, anesthesiology, trauma, and emergency medicine. Structured according to the ABC model approach, surgical airway management, chest tube insertion, finger thoracostomy, resuscitative thoracotomy, ultrasound-guided procedures, advanced vascular access, and regional nerve block techniques were taught. Attendees received surveys immediately following the course that included both Likert-scale based questions and open-ended questions.

Results: Attendees included 25 physicians and 17 faculty members from Israel, North America, South America, Europe, and the United Arab Emirates. Of the participants surveyed, 29 answered the general questions and learning objectives sections: 97% (n=28) strongly agreed or agreed that their professional competencies were improved by the course, 92% (n=27) strongly agreed or agreed that the educational event would enhance their professional performance, and 90% (n=26), felt that they will make changes in their professional practice based on what they learned.

Conclusion: Practically all the participants of an international emergency medicine advanced procedures course felt that it positively contributed to their knowledge and skill set in emergency medicine. Prospective randomized studies should be conducted comparing advanced emergency medicine procedure training using fresh cadavers versus mannequins.

➢ **Category:** Emergency Medical Services & Pre-hospital Care

**ID: 301 - EMS Administration of Aspirin to Chest Pain and AMI/STEMI Patients: Disparities in Care?**

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**Abstract:**

Objective: To determine and compare disparities in aspirin (ASA) administration to chest pain and presumed acute myocardial infarction (AMI) patients treated by EMS.
Intro: AMI is a significant cause of morbidity and mortality worldwide. There are concerns about potential disparities in the treatment of patients based on gender and race. ASA is an essential prehospital treatment for cardiac patients. We examined its use by EMS for chest pain and AMI/STEMI patients using 2021 NEMSIS data.
Methods: This IRB-exempt retrospective study used the 2021 NEMSIS database, which contains over 48 million de-identified EMS calls across the USA. Impressions of chest pain (other and unspecified), myocardial infarction, or ST-elevation myocardial infarction (STEMI) were included. Those under 18 years old, or not transported, were excluded. The rate of ASA use was compared by age, sex, race, and ethnicity. Chi-square and odds ratios with confidence intervals were calculated.
Results: A total of 838,898 patients met the inclusion criteria. The mean and median age were 59 and 60, with 49% female. The majority were White (55%), followed by Black (18%), Hispanic (6%), and Asian (1%). Most (95%) were “chest pain”, with 42,085 (5.0%) in the “AMI” group. Overall, in instances of chest pain and AMI, males receive ASA more often than females. (41% vs 36.7%) in chest pain and (57.1% vs 55.8%) in AMI ($p<0.0001$). However, the absolute difference in administration between genders is less in AMI. White male patients with chest pain are significantly more likely to receive ASA (42.7%) than any other chest pain group (28.3%-38.7%), $p< 0.0001$. In AMI, however, Black and Hispanic male patients get ASA (60.6% and 56.9%) more often than White males (56.7%). White females with AMI receive ASA (56.6%) as often as White males (56.7%). Hispanic females receive ASA at nearly the same rate as White women (56.1% vs. 56.6%), and Hawaiian/Pacific Islander women are somewhat more likely to receive ASA (58.7%) than White females (56.6%) or White males (56.6%). Hawaiian/Pacific Islander women and American Indian/Eskimo women are more likely to receive ASA than their male counterparts: 58.7% vs. 57.3% and 52.3% vs. 50.4%, respectively.
Conclusion: EMS is more likely to administer ASA when they suspect AMI. Differences in the prehospital administration of ASA seen in chest pain patients are minimized when EMS diagnoses an AMI, with some minorities and women actually getting ASA more often than White males.

➢ **Category:** Emergency Medical Services & Pre-hospital Care

**ID: 308 - Evaluating Biomarkers Ratios as Survival Predictors in Septic Patients in The Emergency Department**

**Authors:** Ralphe Bou Chebl[1], Nour Barmo[1] *(Presenting)*, Reem Siblini[1], Razan Diab[1], Cynthia Habib[1], Gilbert Abou Dagher[1]

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**Abstract:**

Objective: This study evaluates CRP/albumin, CRP/procalcitonin, Procalcitonin/Albumin, Procalcitonin/lactate, and Lactate/albumin cutoffs compared to serum lactate for predicting in-hospital mortality among emergency department patients with sepsis or septic shock.

Background: Sepsis accounts for 19.7% of global deaths, representing a leading cause of mortality. Early recognition and intervention in the emergency department are key to improving survival rates. To date, various protocols and biomarkers, particularly serum lactate, have been utilized for diagnosing and evaluating the severity of sepsis.

Methods: This retrospective cohort study included adults above 18 years old, diagnosed with sepsis or septic shock and presenting to the emergency department of a tertiary care hospital in Lebanon, between January 1, 2014 and 2024. The primary outcome was in-hospital mortality.

Results: 700 patients were included. In-hospital mortality was 52.9%. Three biomarker ratios demonstrated higher prognostic value than lactate. CRP/procalcitonin ratio yielded the highest area under the curve (AUC) at 0.61 (95% CI 0.57-0.68, p<0.001) (95% CI 0.45-0.55, p<0.001), compared to lactate's AUC of 0.51 (95% CI 0.45-0.55, p=0.01), with an optimal cut-off threshold to predict survival of 42.44 (sensitivity 77%, specificity 46%). CRP/albumin had an AUC of 0.60 (95% CI 0.52-0.62, p=0.01) with a cut-off of 4.39 (sensitivity 55%, specificity 60%). Lactate/albumin showed an AUC of 0.52 (95% CI 0.47-0.57, p=0.002) compared to lactate's 0.48 (95% CI 0.45-0.55, p=0.002), with a cut-off of 0.31 (sensitivity 10%, specificity 96%).

Conclusion: Among the ratios studied, CRP/Procalcitonin demonstrated the highest prognostic indicator compared to the initial lactate for in-hospital mortality in sepsis and septic shock.

➢ **Category:** Emergency Medical Services & Pre-hospital Care

**ID: 216 - POCUS Carotid Training Durability**

**Authors:** Natalie Van Gilder[1], Brenden Kasravi[1], Madison Nashu[1], Kyle Dornhofer[1], Ronald Goubert[1], Roy Almog[1], Edmund Hsu[1], Soheil Saadat[1], Megan Guy[1], John Fox[1], Jashua Wasmund[1] *(Presenting)*

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**Abstract:**

Introduction and Purpose: The two-finger carotid palpation method to determine a pulse is critical in CPR protocol, however, this technique has been shown to be inaccurate and delayed in an emergency setting. Point-of-care ultrasound (POCUS) has proven to improve potential delays associated with the traditional palpation method. This study aims to assess the durability of POCUS pulse checks in a task trainer simulated CPR event by non-physicians over a six-month time span.

Materials and Methods: 35 students were trained in POCUS carotid pulse checks using handheld linear ultrasound probes for image acquisition. Following training, blinded participants took part in ten task trainer simulations to determine a pulse. These were administered in a predefined order consisting of six “pulse present” and four “no pulse present” events. Every two minutes, a pause was announced during simulated CPR, and the individual had a maximum of ten seconds to individually perform a POCUS carotid pulse check and verbally announce their result to determine inter-rater reliability. Six months after the initial testing, eight original students returned to complete ten additional scenarios using the same protocol.

Results and Conclusions: Fleiss' kappa assessment was performed to determine agreement level of simulated pulse presence between examiners and durability initially and six months after training. Overall agreement of reliability was 0.816, $p < 0.001$ and durability was 1.0. In conclusion students directly and six months after training, can effectively use POCUS to detect carotid pulse during CPR, demonstrating a high reliability and durability for this technique.

➢ **Category:** Trauma

**ID: 54 - Utility of Bedside POCUS in Diagnosing Traumatic Vertebral Artery Injury in the Emergency Department**

**Authors:** John-Henry Lambin[1] *(Presenting),* Vincent Corso[1], Adrienne Koos[1]

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**Abstract:**

A 37-year-old male presented with neck and left upper extremity pain, dizziness, and paresthesias after diving into shallow water. He reported a popping sensation on impact and immediate posterior neck pain. His condition included left-sided weakness and radicular symptoms. Upon arrival at a Level 1 trauma center, he was stabilized in a cervical collar. Physical examination revealed posterior cervical tenderness, axial loading pain, and weakness in the left upper and lower extremities.

Imaging And Diagnosis: A bedside ultrasound using a linear probe demonstrated diminished cephalic Doppler flow at C4-C5 on the right vertebral artery. A subsequent CT scan identified a C4 Type-3A Gehweiler fracture with anterior translation spondylolisthesis. CTA confirmed vertebral artery impingement, and MRI ruled out spinal cord compromise. Neurosurgery performed an emergent corpectomy and fusion, leading to full neurologic recovery within 24 hours postoperatively.

Clinical Q/A:

1. Can POCUS assess vertebral artery injury in acute trauma?
   * Yes, POCUS can provide an initial evaluation of arterial perfusion, complementing advanced imaging.
2. Can POCUS guide surgical decisions in C-spine vascular injuries?
   * Yes, POCUS is a rapid, cost-effective tool for evaluating vascular compromise and aiding in decision-making.

Discussion: POCUS enhances real-time assessment of vertebral artery injury, expediting diagnosis and guiding interventions. While CT and MRI remain essential, POCUS offers an adjunctive, radiation-free method for vascular evaluation in trauma settings.

Takeaways

* Spinal precautions remain the top priority in cervical trauma.
*Aspen C-collar provides optimal sonographic access.
* The hockey-stick probe (GE L8-18i) is ergonomically suited for vertebral artery evaluation in immobilized patients.

➢ **Category:** Trauma

**ID: 135 - Less is More: Comparing Acute Stroke Outcomes After Code Trauma versus Code Stroke Activations**

**Authors:** Mallory Jebbia[1] *(Presenting),* Jacob Brown[1], Esther Lee[1], Albert Kazi[1], Aaron Strumwasser[1], Bryan Love[1], John Woods[1], Babak Khazaeni[1]

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**Abstract:**

Introduction: Patients with acute stroke may occasionally present as trauma activations, particularly after being found down or sustaining falls. This atypical presentation can delay diagnosis and treatment. We compared the evaluation and outcomes of patients with acute stroke presenting as trauma activations versus code stroke activations.

Methods: We conducted a retrospective review of all trauma activations at our level 1 trauma center from January 2018-December 2024. Patients diagnosed with acute stroke on initial trauma imaging formed the code trauma (CT) group. These patients were compared to all patients treated as a code stroke (CS) activation in 2024. The primary outcome was door-to-imaging time; secondary outcomes included door-to-intervention time, discharge disposition and mortality.

Results: There were 208 CS patients and 198 CT patients. CT patients were older (75.3 vs 70.3 years, p<0.001) and had a higher percentage of hemorrhagic stroke (43.9% vs 14.4%, p<0.001). CT patients had a higher NIHSS score (14.44 vs 9.67, p<0.001). Despite minimal injuries (mean ISS 3.3), CT patients experienced longer times to initial brain imaging (47.4 vs 24.8 minutes, p<0.001), lower rates of discharge home (23.2% vs 42.8%) and higher mortality (24.2% vs 12%, p<0.001).

Conclusions: Stroke patients presenting as trauma activations face significant delays in imaging and worse outcomes, despite having few injuries. This may be related to additional testing performed in the trauma bay resulting in imaging delays. Improved protocols are needed to identify possible stroke in low-impact trauma activations and expedite care.

*Table 1: Outcomes of patients treated for cerebrovascular accident after code stroke activation versus code trauma activation.*

| Outcome | Code Stroke (n=208) | Code Trauma (n=198) | p-value |
|---|---|---|---|
| Time to Brain Imaging, mean in minutes | 24.8 | 47.4 | <0.001 |
| Thrombolytics, n (%) | 46 (22.1%) | 4 (2.0%) | <0.001 |
| Door-to-Thrombolytics Time, mean in minutes | 43.7 | 50.3 | 0.185 |
| Thrombectomies, n (%) | 35 (16.8%) | 22 (11.1%) | 0.130 |
| Door-to-Puncture Time, mean in minutes | 82 | 98 | 0.175 |
| LOS, mean in days | 9.0 | 9.55 | 0.285 |
| Discharge Disposition, n (%) | | | <0.001 |
| Home | 89 (42.8%) | 46 (23.2%) | |
| SNF | 73 (35.1%) | 78 (39.4%) | |
| Hospice | 3 (1.4%) | 13 (6.6%) | |
| AMA | 11 (5.3%) | 4 (2.0%) | |
| Mortality, n (%) | 25 (12.0%) | 48 (24.2%) | <0.001 |

*LOS = length of stay, SNF = skilled nursing facility, AMA = against medical advice*

➢ **Category:** Trauma

**ID: 146 - The shock index multiplied by Glasgow coma scale is predictive of mortality in trauma patients**

**Authors:** Sung Hyun Lee[1] *(Presenting)*

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**Abstract:**

Objective: The prognostic utility of the reverse shock index multiplied by Glasgow Coma Scale (rSIG) in trauma patients with traumatic brain injury (TBI) remains unclear. This study aimed to assess the predictive performance of rSIG for in-hospital mortality, with a focus on differences by age group.

Methods: This prospective, multi-national, and multi-center cohort study utilized data from the Pan-Asian Trauma Outcome Study (PATOS) registry across the Asia-Pacific region. Adult trauma patients presenting to participating hospitals were included. The primary exposure was low rSIG measured upon arrival at the emergency department. The main outcome was in-hospital mortality. Multilevel logistic regression and interaction analyses were conducted to assess the association between rSIG and mortality across age groups.

Results: Low rSIG was significantly associated with increased in-hospital mortality in patients both with and without TBI (adjusted odds ratio [aOR] 1.49; 95% CI, 1.04–2.13 and aOR 1.71; 95% CI, 1.16–2.53, respectively). Among patients with TBI, the predictive strength of low rSIG differed by age: aOR for younger patients was 1.72 (95% CI, 1.44–1.94), while for older patients it was 1.13 (95% CI, 1.07–1.52; p for interaction < 0.05).

Conclusion: Low rSIG is independently associated with increased in-hospital mortality in trauma patients, including those with TBI. Its predictive performance is notably stronger in younger patients with TBI, highlighting the need for age-adjusted interpretation in trauma triage and early decision-making.

➢ **Category:** Trauma

**ID: 188 - Identification of Risk Factors Associated with Unstable Cervical Spine Fractures in Trauma Patients**

**Authors:** Radosveta Wells[1] *(Presenting)*, Gregory Patek[1], Luis Rascon[1], David Erives[2], Susan Watts[1]

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**Abstract:**

Objective: Study objective was to identify risk factors for unstable cervical spine (C-spine) fractures in trauma patients. National Emergency X-radiography Utilization Study (NEXUS) and the Canadian C-spine Rule (CCR) help identify trauma patients at highest risk for C-spine fractures but less is known about risk factors associated with unstable vs stable C-spine fractures.
Methods: IRB-approved retrospective chart review conducted at urban Level 1 Trauma Center. Patients were identified by ICD 9 and ICD 10 codes related to C-spine fractures (January 2012 to July 2021). Data extracted were sex, age, visit date/time, injury date/time, mode of arrival, mechanism of injury (MOI), stability of fracture, presence of neck pain/midline tenderness. Patients were excluded if fracture was known or chronic.
Results: 700 patients were identified who had imaging for C-spine fractures; 232 (33%) unstable fractures (USF), 468 (67%) stable (SF). Data analysis indicated increased odds of USF were associated with sex, age, neck pain, midline tenderness, and some MOI. Females had 42% greater odds of USF compared to men (p=0.04). Odds of USF increased with age (2% per year after age 20) and those 70 and older had more than double the odds of unstable fracture compared to teenagers (70s (OR 2.32, P=0.05), 80s (OR 4.38, P=0.001), 90s (OR 2.74, P=0.05)). About 40% reported neck pain and had almost double the odds of having USF (OR 1.84, p=0.002) compared to those with no neck pain. The 36% reporting mid-line tenderness had >50% greater odds of having an unstable fracture (OR 1.52, p=0.04) compared to those without. 73% of unstable fractures were associated with four MOI's (motor vehicle accident (MVA), MVA with rollover, ground level fall (GLF), fall 10-19 ft). Compared to MVA with rollover, falls of 10-19 feet had triple the odds of resulting in unstable fracture (OR 3.1, p=0.02), GLF more than double the odds (OR 2.79, p=0.001), and MVA had 41% greater odds (p=0.25). Other notable findings: 19% of patients who had unstable fractures were walk-in patients (43 of 232) and 13% (30 of 232) had no record of cervical collar in place.
Conclusions: As expected, MVA and MVA with rollover result in significant number of unstable fractures, but C-spine injuries due to GLF, considered low-risk mechanism, result in a similarly significant number of unstable fractures, particularly in those over 70 years old.

➢ **Category:** Trauma

**ID: 221 - Enhancing Mild Traumatic Brain Injury Diagnosis Through Advanced Oculomotor Behavior Analysis**

**Authors:** Natalya Marsh[1], Emma Gill[1], David Liernur[2], Ashwin Venkatakrishnan[3], Cameron Neeki[1], Nicolas Brunet[4], Fanglong Dong[1] *(Presenting)*, Michael Neeki[1]

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**Abstract:**

Introduction: Mild traumatic brain injury (mTBI), commonly known as a concussion, affects millions annually and poses diagnostic challenges due to its subtle and variable symptoms. Eye tracking has emerged as a promising tool for detecting neurological disruptions associated with mTBI, as oculomotor function is regulated by multiple cranial nerves. However, current approaches lack sufficient clinical validation. This study aims to improve the diagnostic accuracy of eye movement analysis for mTBI through methodological advancements.

Methods: We analyzed eye movement data from 179 neurotypical individuals and 4 individuals who sought medical attention following head injuries. A total of 45 oculomotor variables, including saccade amplitude and frequency, were examined. We incorporated microsaccades—small, involuntary eye movements occurring during fixation—and developed a novel testing paradigm engaging multiple neural circuits. Additionally, a new algorithm was implemented to identify deviations in eye movement patterns rather than relying on predefined biomarkers.

Results: Individuals with concussions exhibited significant deviations in oculomotor behavior compared to neurotypical controls. Using a ranking system based on deviation from the neurotypical average, we found that 90% of head-injured participants ranked within the top 30, compared to only 7% of controls. The probability of this occurring by chance was statistically negligible ($p \sim 0$), reinforcing the reliability of eye tracking as a diagnostic tool.

Conclusions: Our findings support the utility of eye movement analysis in improving the accuracy and objectivity of mTBI diagnosis. By refining diagnostic methodologies, this research contributes to the development of a more reliable and accessible tool for concussion assessment.

➢ **Category:** Critical Care

**ID: 100 - Critically Ill Patients Can Safely Be Extubated in an Integrated-Acuity ED**

**Authors:** Alexander Bracey[1] *(Presenting)*, Rachel Leavitt[1], Iman Aly[1], James Mantas[1], Gregory Wu[1], Luke Duncan[1], Chirstopher Hanowitz[1], Denis Pauze[1]

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**Abstract:**

Background and Objectives: The volume of critically ill patients presenting to the Emergency Department (ED) has risen in the last decade without a concomitant increase in intensive care unit (ICU) beds. Critically ill patients boarding in the ED are known to have higher instances of morbidity and mortality compared to those boarding without critical illness. It has previously been demonstrated that patients boarding in dedicated critical care areas within the ED may be safely extubated in the ED, thereby sparing scarce hospital resources; however, it has never been demonstrated in an adult, integrated-acuity ED.

Methods: We performed a retrospective chart review of adult critically ill patients boarding for an ICU who underwent extubation in the ED in an academic, urban, tertiary care adult ED. Patients with existing DNR/DNI orders and palliative extubations were excluded. The study period was from January 2024 - December 2024. Patients were identified by query of the electronic medical record for extubation documentation. Demographics and clinical data were collected. The primary outcome was the number of patients re-intubated within 48-hours of ED extubation. Secondary outcomes included the number of ICU days, number of hospital days, and number of patients discharged from the ED. Data analysis was performed using descriptive analytics.

Results: Twenty-eight patients were extubated in the ED during the study period. Intoxication and status epilepticus accounted for 57.1% (16/28) of all indications for intubation. The median (IQR) patient age was 57.5 (38.5-70) years. Females were 25.0% (7/28) of patients, while white/Caucasians comprised 67.8% (19/28). Two patients 7% (2/28) were reintubated within 48-hours of extubation. The first was intubated for a non-emergent orthopedic surgery. The second was intubated after being found to have altered mental status in the setting of intoxication after admission. Of extubated patients, 14.2% (4/28) were discharged directly from the ED. 75.0% (21/28) patients were admitted to med-surg wards following extubation with a median (IQR) length of stay of 4 (2-8.25) days. 11% (3/28) were admitted to an ICU following intubation, of which one died 10 days post-ED extubation. No patients were re-admitted within 30 days of discharge.

Conclusion: Appropriately selected patients can be safely extubated in the ED, which may shorten the overall hospital course.

➢ **Category:** Critical Care

**ID: 265 - Accidental Hypothermia Management in Emergency Care: Early Trends from a Prospective Pilot Cohort**

**Authors:** Kornél Ádám[1] *(Presenting)*, Anna Stelkovics[1], Barbara Vanda Farkas[1], Judit Imecz[1], Bánk G. Fenyves[1], Csaba Varga[1,2]

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**Abstract:**

Background: Accidental hypothermia may cause severe systemic disturbances. In vivo physiological, laboratory, and rewarming dynamics remain partially documented in real-world emergency settings.
Objectives: To characterize baseline deviations and early changes in clinical and laboratory profiles during active rewarming.
Methods: Adults presenting to the emergency department with core temperature <35 °C were prospectively enrolled (n=16). Demographics, medical history were recorded. Core temperature and vital parameters were monitored. Consecutive blood gases were analyzed. Comprehensive labs and viscoelastic coagulation were obtained at presentation and post-rewarming. Applied rewarming was assessed. Paired sample sizes varied by parameter (n = 6–15), reflecting data completeness.
Results: Admission core temperature rose from 29.7 ± 3.9 °C to 33.2 ± 3.2 °C at 4h ( Δ 3.6 °C; 95 % CI 2.8–4.3; p < 0.001; 0.9 °C/h). Heart rate increased (70.1 ± 34.5 → 80.8 ± 30.9 bpm; p = 0.027). Initial blood gas: pH 7.17 ± 0.23, base excess –8.3 ± 9.6 mmol/L, $PaO_2$ 162 ± 141 mmHg. Glucose fell from median 6.45 to 4.65 mmol/L (p = 0.031), hematocrit from 0.355 ± 0.087 to 0.313 ± 0.070 (p = 0.026); lactate from 2.0 (1.45–4.43) to 1.9 (1.18–2.08) mmol/L (p = 0.039). High-sensitivity troponin T rose from 35.3 (16.9–68.9) to 75.0 (26.7–104.8) ng/L (p = 0.019). EX-CT shortened from 58.5 (34.0–71.0) to 48.0 (39.8–61.0) s (p = 0.31).
Conclusion: Active rewarming restored normothermia and reversed key metabolic and coagulation disturbances with minimal myocardial stress. Early findings support physiological efficacy and warrant larger, outcome-driven studies.

➢ **Category:** Airway and Pulmonary

**ID: 98 - Performance Errors in Hyperangulated Video Laryngoscopy**

**Authors:** Alexander Bracey[1] *(Presenting)*, Aaron Lacy[2], Ryan Barnicle[3], Alexander Giuliano[4], Scott Weingart[5], James Mantas[1], Iman Aly[1], Rachel Leavitt[1], Denis Pauze[1]

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**Abstract:**

Background And Objectives: Traditionally, ETI has been taught dichotomously as successful or unsuccessful. The near ubiquitous adoption of video laryngoscopy has changed the emergency airway education landscape. Recent literature utilizing the video recording feature has described performance errors commonly seen in standard geometry video laryngoscopy (SGVL) attempts. However, hyperangulated video laryngoscopy (HAVL) requires a different technique and may therefore have different performance errors than SGVL.
Methods: We performed a retrospective review of 50 HAVL videos. The videos were a random selection of HAVL attempts from a single urban, academic, tertiary care hospital with emergency medicine residents. The primary outcome was to determine the performance errors seen in HAVL. A secondary outcome was to determine the frequency of these performance errors. Two board-certified emergency physicians reviewed the same videos. The reviewers were blinded to each other's results. A third board certified emergency physician served as tiebreaker. Videos were scored for all performance errors seen during a single ETI attempt. Descriptive analytics were used for statistical analysis. Interoperator agreement was calculated by Cohen's Kappa.
Results: Interoperator agreement was excellent (0.87). Of 50 videos, 22% (11/50) had no performance errors. Seventeen discrete performance errors during HAVL were identified, of which 4 were unique to HAVL: dislodgement of endotracheal tube (ETT) during rigid stylet removal, ETT dislodgement during rigid stylet pop, failure of tongue control, and translation (not rotation) of the ETT with rigid stylet). Other performance errors seen common to SGVL included: insertion off midline, inadequate suctioning, missed anatomical structure recognition, overly deep insertion, failure to engage midline vallecula, lost seating in vallecula, not full seated in vallecula, failure to engage midline vallecula, too much force in the vallecula, inadequate lifting force, overly-rotated insertion, anterior tracheal ring hangup, glottic structure trauma, and premature withdrawal of camera. The most common performance error was insertion off midline (11/50) followed by over-rotated insertion (5/50).
Conclusion: HAVL is a discrete skill from SGVL. In this small cohort, the most common performance errors were insertion off midline and over-rotation insertion.