Since January 2020 Elsevier has created a COVID-19 resource centre with free information in English and Mandarin on the novel coronavirus COVID-19. The COVID-19 resource centre is hosted on Elsevier Connect, the company's public news and information website.

defined by the requirement of vasopressor support, is the most severe form of sepsis with a significantly high rate of morbidity and mortality. Patients with septic shock requiring vasopressor support necessitate intensive care unit (ICU) admission. This study evaluates frequency of ICU versus general care (GC) admission and outcomes in patients with septic shock that were managed in an emergency department-based ICU (ED-ICU).

Study Design/Methods: This is a retrospective review of 369 patients in septic shock who presented to a single academic quaternary care center that required ICU level care from 2/2015 to 2/2021. All patients received initial care in the main ED and the ED-ICU. These patients were ultimately admitted to an inpatient ICU or GC floor. The primary outcome is the number of patients able to avoid an inpatient ICU admission. Secondary outcomes include the ED-ICU and hospital length of stay (LOS), fluid resuscitation between groups, the rate of ICU short stay admissions (ICU admission with transfer to GC/moderate care within 48 hours) and floor escalations of care to ICU within 24 hours. Statistical analysis was performed using the student's T-test and chi-squared test and where appropriate, $p<0.05$ was considered significant.

Results/Findings: Mean age of patients was similar, 65.5 vs 63.2, for ICU and GC admission respectively ($p>0.05$). There were similar numbers of males to females ($p>0.05$). The Charlson score for baseline comorbidities was similar between the GC and ICU patients (7.12 vs 6.63, $p=0.284$). Initial lactate for inpatient ICU admissions was higher than for GC (3.84 vs 2.79, $P=0.003$). After receiving care in an ED-ICU, 100 patients (27.1%) were able to avoid inpatient ICU admission and were admitted to GC. 269 patients (72.9%) necessitated ICU admission. ED-ICU LOS was longer for GC patients (12.49 vs 7.25 hours, $p<0.001$). Overall mortality was significantly greater for patients admitted to inpatient ICU (32.3% v 8.0%, $p<0.001$). Hospital LOS was shorter for patients admitted to GC but not statistically significant (9.05 vs 11.82 days, $p=0.141$). Fluid resuscitation was similar between patients admitted to ICU and GC (1774.2 vs 1927.7 mL, $p=0.116$). At study conclusion, 16.18% of patients de-escalated from the ICU to the floor within 48 hours after admission from ED- ICU and 1.47% de-escalated to moderate care. 5% of patients required escalation to inpatient ICU from GC within 24 hours.

Conclusion: This study demonstrates that an ED-ICU serves as an appropriate intermediary care modality for patients with septic shock requiring vasoactives. Patients receiving initial care in the ED-ICU ultimately admitted to GC have low incidence of mortality, few incidences of subsequent escalation to ICU level of care, and shorter hospital length of stay. Care between groups, Inpatient ICU and GC, appears similar as both received similar amounts of fluid resuscitation and initiation of vasopressors in the emergency department and ED-ICU.

No, authors do not have interests to disclose

208 Performance Assessment of Electronic Nose Device for Detection of COVID-19 in Breath Samples

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Study Objectives: Novel methods of rapid and large-scale testing for COVID-19 infection are necessary during the ongoing pandemic. Although common test samples are nasopharyngeal and oral specimens, breath analysis has also been proposed for COVID-19 detection. Our study objective was to evaluate the performance of the electronic nose (eNOSE), a portable breath testing device developed by the National Aeronautics and Space Administration (NASA) for the diagnosis of COVID-19 infection. The eNOSE sensor is approximately 6 inches by 3 inches by 3 inches and analyzes breath samples to detect combinations of volatile organic compounds (VOCs) diagnostic of SARS-CoV-2 virus infection.

Methods: Following Institutional Review Board and Biosafety Committee approvals, we recruited adults with a previous positive COVID-19 nasopharyngeal reverse transcription polymerase chain reaction (RT-PCR) test and volunteers with unknown infection status. During the study visit, we collected breath samples and introduced it to the eNOSE device for VOC sensing. Concurrently, participants provided anterior nares samples for RT-PCR testing for COVID-19. Cases were those who had a positive RT-PCR and the controls were those who had a negative RT-PCR at the time of breath sample collection. The sensitivity and specificity of the eNOSE device were calculated using the concurrent RT-PCR test as the gold standard.

Results: There were 64 participants enrolled, with a mean age of 42 years (SD +13 years) and of whom 44 (69%) were female. We recruited 54 previously COVID-19 positive participants and 10 participants with unknown infection status. At the time of breath collection, there were 32 RT-PCR positives, 31 RT-PCR negatives, and one untestable sample. Of those with a RT-PCR positive result, 21 had a positive eNOSE result and 11 had a negative eNOSE result. Of those with RT-PCR negative result, 21 had a negative eNOSE result and 10 had a positive eNOSE result. The eNOSE device was 66% sensitive and 68% specific for the detection of COVID- 19 infection. The mean time from recruitment to enrollment was 7 days (SD +7 days).

Conclusions: From the limited data set collected to date, the eNOSE device had moderate sensitivity and specificity for the diagnosis of COVID-19 infection. Both parameters are expected to improve as more samples are analyzed. Our next step is to include cycle threshold (Ct) values in the analysis to learn if the eNOSE response is correlated with vira

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209 Combined Hepatitis B Virus and Hepatocellular Carcinoma Screening Using Point-of-Care Testing and Ultrasound in a Tanzanian Emergency Department: A Preliminary Report

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Study Objectives: Sub-Saharan Africa has a disproportionate burden of hepatitis B virus (HBV) and hepatocellular carcinoma (HCC). The World Health Organization aims to detect 90% of global cases of HBV by 2030 – novel screening strategies will be needed to achieve this goal. In this study, we sought to assess the utility of an emergency department (ED)-based, combined HBV and HCC screening program in Arusha, Tanzania.

Methods: We conducted a preliminary analysis of patients who participated in a combined HBV and HCC screening program at a regional referral hospital ED in Arusha, Tanzania, between April 19, 2022 and May 4, 2022. We prospectively enrolled patients who presented primarily to the ED, as well as those who were referred to the ED from clinic. All patients underwent informed consent and completed a study questionnaire. HBV testing was conducted using a rapid ($\sim$5 minutes) point-of-care (POC) immunochromatographic assay, which detects hepatitis B surface antigen. We used capillary blood samples obtained via fingerstick, for rapid assessment and minimization of risk. Patients who were HBV positive were screened for HCC via POC ultrasound (POCUS). Local ED and critical care providers with POCUS experience were trained on how to systematically screen the liver parenchyma for masses. The primary outcome was the number of new HBV diagnoses. The secondary outcome was the number of patients who had a new mass detected by POCUS that was concerning for HCC. Data were analyzed with descriptive statistics.

Results: A total of 435 patients were tested for HBV (primary ED: 355, clinic-referral: 80). The median age of patients was 45 $\pm$ 15 years, and 67% were female. Only 26% of patients reported having a primary care doctor. Fourteen percent of patients had been previously vaccinated for HBV. Sixty-six percent of patients did not know how HBV is transmitted. Six percent of patients had a family member with a known HBV infection. There were 9 new HBV diagnoses (primary ED: 8, clinic-referral: 1), which corresponds to a seroprevalence of 2.3% [95% CI 1.0, 3.9]. No patients had masses detected that were concerning for HCC. All positive patients were scheduled for follow-up visits to assess the need for HBV treatment.

Conclusion: We found that an ED-based, combined HBV and HCC screening protocol can be feasibly implemented. This pilot study could serve as a model for HBV/HCC screening in regions with high HBV endemicity and low rates of community screening.

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210 Emergency Department Point-of-Care Echocardiography and Lung Ultrasound in Predicting COVID-19 Severity

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Study Objectives: Point-of-care ultrasound (POCUS) may reveal findings that can impact the diagnosis, monitoring, and prognosis of COVID-19 in the emergency department (ED). POCUS in cases of COVID-19 may reveal lung findings (B-lines and pleural abnormalities) as well as cardiac findings including left ventricular dysfunction (either pre-existing or from COVID induced myocarditis) or right

ventricular strain (either pre-existing or from pulmonary embolism). We sought to determine if POCUS performed on ED patients with COVID-19 can help predict disease course, severity, or identify complications.

Methods: This was a retrospective cohort study of adult patients presenting to the ED of a large academic medical center who tested positive for COVID-19 either at hospital admission or within 2 weeks prior to presentation and received POCUS of the heart and/or lungs as part of their workup. Subjects without any heart or lung diagnostic quality ultrasound clips and those with presentations not related to COVID-19 symptoms were excluded from the study. The POCUS findings of these patients (left ventricular dysfunction, right ventricular strain, presence of B-lines, and pleural line abnormalities) were analyzed, as were their hospital courses. Patients with worsening hypoxemic respiratory failure or shock requiring higher level of care as well as patients who expired were considered to have developed severe COVID-19. Multivariate logistic regression analysis was performed to determine if there was a correlation between ED POCUS findings and development of severe COVID.

Results: A total of 155 patients met study criteria, of which 148 patients had documented echo views and 120 patients had documented lung views. Our sample had mean age of 66.5 years old (+/-18.6) and was 53% female. Subjects with left ventricular dysfunction that was not previously documented had increased odds of having severe COVID during their hospitalization compared to patients with old and no left ventricular dysfunction (OR 3.98, 95% CI 1.20-13.16, p=0.024). The presence of pleural line abnormalities was also predictive for development of severe COVID during that hospitalization (OR 3.34, 95% CI 1.15- 9.66, p = 0.026).

Conclusion: Our investigation found that approximately 15% of subjects had left ventricular dysfunction not known to be present previously, and these patients were about four times more likely to develop severe COVID. Similarly, presence of pleural line abnormalities on POCUS was associated with a three-fold likelihood of severe COVID during that hospitalization. These findings suggest that POCUS can be utilized in terms of COVID-19 clinical course and prognosis.

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211 Traumatic Injury to the Posterior Fossa: A Secondary Analysis of Demographics, Clinical Characteristics, Computed Tomography Imaging, and Outcomes

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Study Objectives: Traumatic brain injuries to the posterior fossa are rare, not well characterized, with potential for severe events. We aim to describe characteristics and outcomes of traumatic posterior fossa injuries (TPFI).

Methods: We performed a secondary analysis of the NEXUS trauma database, including all patients whose head computed tomography identified TPFIs. We classified the injuries into three patterns: Type I – primarily above the tentorium with limited posterior fossa injury; Type II – above and within the posterior fossa; Type III – primarily within the posterior fossa, and describe epidemiology of injury with respect to demographics, clinical characteristics, mechanisms of injury, and outcomes.

Results: Of the 11770 patients in the database, 184 patients had TPFI. Among the 182 with known demographics, (Median age=56.1 years, IQR=38.6-70.1), 131 (71%) were males and 51 (28%) were females. Patients presented with a median of 4 brain injuries (IQR=2-5): there were 144 (78%) subarachnoid hemorrhage, 102 (55%) subdural hematoma, 15 (8%) epidural hematoma, 80 (43%) parenchymal bleed, 45 (25%) herniation, 26 (14%) contusion, 25 (14%) edema, and 25 (14%) pneumocephalus. Of the 170 patients with known mechanisms of injury: there were 88 (52%) motor vehicle accidents, 74 (43.5%) falls, 7(4%) assaults, and 1 (0.5%) found with trauma. Of the 184 patients with clinical evaluations, there were 42 (23%) signs of basilar/depressed skull fracture, 94 (51%) scalp hematoma, 133 (72%) abnormal level of alertness, 19 (10%) recurrent/forceful vomiting, 49 (26%) Glasgow Coma Scale of 15, 97 (53%) abnormal behavior, and 101 (55%) neurological deficit. Of the 163 patients with known outcomes, there were 52 (32%) deaths, 48 (29%) discharges home (DH), 48 (29%) discharges to rehabilitation facilities (DRF), 14 (9%) transfers to inpatient facilities (TIF), and 1 (1%) discharge against medical advice (AMA). Among 58 Type I injury patients: 19 (33%) died, 12 (21%) were DH, 20 (34%) were DRF, 6 (10%) were TIF, and 1 (2%) was AMA. Among 74 Type II injury patients: 30 (41%) died, 17 (23%) were DH, 21 (28%) were DRF, and 6 (8%) were TIF. Among 31 Type III injury patients: 3 (10%) died, 19 (61%) were DH, 7 (23%) were DRF, and 2 (6%) were TIF.

Conclusion: Brain injuries including the posterior fossa are associated with high rates of mortality and disability; only a small subset of patients can return home.

Clinical Signs/Symptoms per Injury Pattern

	Type 1 [N(%)]	Type 2 [N(%)]	Type 3 [N(%)]
	(n=63)	(n=87)	(n=34)
Signs of Basilar/Depressed Skull Fx	19 (30.1)	21 (24.1)	2 (5.9)
Scalp Hematoma	35 (55.6)	44 (50.6)	15 (44.1)
Abnormal Level Alertness	50 (79.4)	69 (79.3)	14 (41.2)
Recurrent/Forceful Vomiting	7 (11.1)	9 (10.3)	3 (8.8)
GCS 15	11 (17.5)	21 (24.1)	17 (50.0)
Abnormal Behavior	37 (58.7)	46 (52.9)	14 (41.2)
Neurological Deficit	42 (66.7)	49 (56.3)	10 (29.4)

No, authors do not have interests to disclose

212 Wait, What? Oral Midodrine Instead of Pressors for Septic Shock?

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Background: Coincident with capacity strains on our institution's intensive care units (ICUs) during the Covid-19 pandemic, we perceived an increase in the use of oral Midridone (MID) administration for blood pressure (BP) support in septic shock patients to avoid intravenous (IV)-vasoactive medications and ICU admission. Little is known about the efficacy of MID in this patient cohort. The goal of this study was to evaluate the clinical outcomes associated with use of MID to augment blood pressure support in ED patients with septic shock.

Methods: For this single center retrospective review of patients requiring pressor support after sepsis bundle activation, we assessed frequency of IV versus PO vasoactive medication administration both within the ED and after admission on patient outcomes including length of ED stay, admission level of care, discharge disposition, and mortality.

Results: Of 6293 ED sepsis bundle activations from January 1st, 2019 to April 20th, 2022, 327 (5.2%) of these patients were in shock requiring vasopressors in the ED. Of these patients, 249 received IV vasopressors (IVP), most frequently norepinephrine, but 62 received only MID while 16 patients were given both IVP and MID. The cumulative in-hospital mortality rate (MR) for administration of any of these medications in the ED was 40%. For those who received IVP only, MR was 47%; for MID only it was 14.5%; and for those who received both MR was 31.3%. EDLOS was shortest (6.92 hours) for patients receiving IVP only but increased to 11.7 hours for IVP + MID and 18.9 hours for MID. ICU admission rates were greatest (67.5%) for IVP only patients which decreased to 41.2% for MID + IVP and only 1.6% for MID. Hospital LOS was 7.81 days for IVP only, 12.75 days for MID + IVP, and 6.78 days for MID. Additionally, there were 430 patients who were initially stable in the ED but subsequently decompensated requiring initiation of vasopressive medications after hospital admission with a 40% overall MR for these patients. 210 patients were given IVP (32% MR), 118 requiring only MID (24% MR), while 102 received both (37% MR).

Conclusions: In this cohort of sepsis patients requiring blood pressure support, patients who received oral Midodrine in place of IVP had longer ED LOS, lower ICU admission rates, and lower mortality rate then patients who received IVP. However, with a less acute ESI score (average 2.1 for MID only vs 1.7 for IVP only) this cohort who composed 19% of septic shock patients presenting to the ED seemed to be considered "less sick" upon arrival. Future prospective research is required to explore the safety and efficacy of oral midodrine in the ED sepsis population requiring blood pressure support.

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