developed an ultrasound protocol combining TTE with abdominal aorta ultrasound. The goal of this study was to determine the sensitivity of this protocol in the evaluation of aortic dissections.

Design & Method: This was a single-center retrospective review of patients evaluated in the emergency department (after our protocol had been established) from January 1, 2010, through March 31, 2017, who had a diagnosis of AD confirmed by CT angiography. Our protocol used three TTE signs to suggest AD: the presence of a pericardial effusion, an intimal flap, or an aortic outflow track size of >3.5 cm during diastole (measured from inner wall to inner wall within 2cm of the aortic annulus). In the abdominal aorta, the presence of an undulating intimal flap suggested AD. The presence of any of these findings was considered a positive study for dissection.

Results: A total of 441 ultrasounds were performed for suspected AD. We identified 27 patients during the study period (11 Stanford type A and 16 Stanford type B). Specifically, 26 of the 27 patients had at least one of the aforementioned findings. The only patient not diagnosed with bedside ultrasound had a Stanford type B dissection limited to the descending thoracic aorta. Furthermore, the presence of an intimal flap had a 100% positive predictive value for dissection. These criteria showed a sensitivity of 96.3% (95% CI 81.03% - 99.91%) (100% for type A & 93.75% for type B) and a specificity of 90.8% (95% CI 87.62% - 93.42%) for AD (Fisher's exact = 0, $p < .001$; $x2\ [1] = 155.06$, $p < .001$). Our protocol provided an overall negative predictive value of 99.73% (95% CI 98.21% - 99.96%) for both dissection types.

Conclusion: By combining TTE with abdominal aortic ultrasound, we were able to diagnose 96.3% of patients with an aortic dissection.

19 Are Emergency Department to Emergency Department Transfers at Risk for Diagnostic Errors?

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Objective: Emergency department (ED) transfers are common at academic medical centers. Many emergency medicine (EM) residencies are based at a tertiary care hospital that acts as the hub for a regional referral network. Little is known about the rate of diagnostic errors within this transfer population. Our goal was to determine the rate of diagnostic errors made in the receiving hospital in the transfer population at our institution in order to help inform and develop a resident curriculum around ED transfers.

Design and Method: This was a retrospective chart review with a primary outcome measure of diagnostic error in the ED transfer population. We defined diagnostic error as a discrepancy between the diagnosis made by the EM attending notes and the final diagnosis made by the admission team on discharge. The study was performed at an urban, academic tertiary care referral center with an affiliated three-year EM residency. All patients transferred to the ED between 07/2016 and 09/2016 were eligible. There were 1,785 ED transfer patients during this time period. We did a power calculation using an error rate of 0.13% (from previous published data from our institution for all-comers) with an expected error rate of 2% in the ED transfer population, requiring at least 102 cases for an alpha of 0.05% and power of 80%. We reviewed individual records of 143 randomly selected patients. Diagnostic discrepancies between these items were reviewed by two blinded attending physicians and adjudicated as errors if the diagnosis occurred within the first 24 hours of the hospitalization, if it was not documented for in the ED note, and if the two reviewers agreed it was a missed ED diagnosis.

Results: The average age was 60 for the population studied and 51% were male. Four errors were found among the 143 patients for an error rate of 2.8% (CI 0.1-5.5). Diagnostic errors from all-comer ED population to the ED transfer population were compared ($p= 0.002$). In this single tertiary center study, the diagnostic error rate was found to be 21 times higher in the ED transfer population than all-comers to the ED.

Conclusion: This higher diagnostic error rate could be due to multiple issues, including the fact that many patients are transferred to a tertiary care facility because they are medically complex or hemodynamically unstable. In this unique population an educational curriculum centered on the transfer population, anchoring bias, and cognitive debiasing strategies may improve care.

20 Human Cadaver vs Simulator Nerve Model for Ultrasound-Guided Regional Anesthesia Resident Education

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Objective: Ultrasound (US)-guided regional nerve blocks have been shown to be a safe and effective modality for pain relief. While it is a skill increasingly used by emergency physicians, there is limited data on how to teach this skillset. Our goal was to assess the efficacy of cadaver-based teaching of ultrasound-guided nerve blocks versus simulation (SIM)-based nerve models.

Design & Method: Residents of all post-graduate year levels (PGY-1 through PGY-3) were given a presentation on

US-guided regional anesthesia. They were then randomized to a cadaver or SIM nerve-block model to perform regional nerve blocks. We surveyed the residents to assess their comfort with performing ultrasound-guided nerve blocks, as well as the educational effectiveness of the session. The survey used a Likert scale from 1 to 7. We performed independent-sample t tests to assess if there were significant differences between the two groups.

Results: Twenty-seven residents participated in the session, 13 randomized into the cadaver group (six PGY-1, four PGY-2, and three PGY-3) and 14 into the SIM group (two PGY-1, five PGY-2, seven PGY-3). The average number of previous blocks was 2.07 in the cadaver group and 3.85 in the SIM group. There was no statistically significant difference in comfort level between the cadaver and SIM group (5.3 [SD = .48] vs. 5.9 [SD = .86]; t [25] = - 2.019, p = .054) in comfort performing US-guided nerve blocks after the session. Similarly, there was no significant difference in educational benefit (6.7 [SD = .63] vs. 6.9 [SD = .27]; t [15.9] = -1.251, p = .229).

Conclusion: There was no significant difference in comfort level between the cadaver and SIM groups. This finding may be confounded by the fact that the SIM group contained more PGY-3 residents and a greater average number of blocks performed prior to the session. However, this data is reassuring given that SIM models are more cost effective and easily accessible for educational purposes. Furthermore, residents found the activity to be extremely beneficial with a rating of 6.8, echoing the necessity of incorporating this into curricula.

21 Life after Trauma: A Survey of Trauma Centers Regarding Acute and Post-traumatic Stress Disorders

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Objective: Patients who suffer a physical trauma are at risk of developing acute stress disorder (ASD) and/or post-traumatic stress disorder (PTSD). Level I trauma centers have an unparalleled opportunity to assess and educate trauma patients and their caregivers about these disorders; therefore, the purpose of this study was to determine whether assessment and educational programs for ASD and PTSD are present at Level I trauma centers in the United States. Additionally, this study strived to identify the protocols employed at these institutions, the health professionals involved, and levels of training provided to resident physicians and nurses regarding these disorders.

Methods: In March and April 2017, we surveyed electronically the trauma program managers and trauma medical directors at 209 adult and 70 pediatric trauma centers. The survey addressed the following items: populations assessed or educated for ASD and PTSD; timing of assessment or education programs; healthcare professionals involved; specific tools used; and education offered to resident physicians and nurses. Hospital characteristics collected in the survey instrument included the date of establishment, number of hospital beds, annual number of trauma admissions, region in which the hospital is located, residency/fellowship programs offered, and certification status by the American College of Surgeons, state guidelines, or both. This study was declared exempt by the institutional review board.

Results: We received responses from 39.7% (N=84) of adult and 41.4% (N=29) of pediatric trauma centers. Of the responding institutions, 16.0% of adult and 44.8% of pediatric hospitals reported having a written protocol to assess patients for ASD, PTSD, or both. Additionally, 8.8% of adult and 39.3% of pediatric hospitals reported having a written protocol to educate patients about ASD, PTSD, or both. For caregivers of trauma patients, 3.8% of adult and 25% of pediatric hospitals reported having a written protocol to assess for ASD, PTSD, or both. We found that 8.6% of adult and 18.5% of pediatric trauma centers reported having a written protocol to educate caregivers about ASD, PTSD, or both.

Conclusion: A minority of U.S. Level I trauma centers offers assessment or educational protocols for these disorders. Left unchecked, the personal repercussions and societal costs continue to escalate.

22 Association Between Post Graduate Year and Adverse Events/Error of Emergency Department Admissions

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Objective: EM residents are supervised by attending physicians when they work in the ED. Therefore the Post-Graduate Year (PGY) level should not influence care. Unexpected floor to ICU transfers can often be an indication for an adverse event or error (AEE). These transfers have been shown to have higher mortality than patients admitted directly to the ICU. Floor to ICU transfer have been monitored as an area of quality improvement. It is unclear if the level of training of the EM resident correlates with AEE in the floor to ICU transfer population.

Design and Method: This retrospective study was done at an urban, academic tertiary care referral center with an affiliated 3 year EM residency. All patients presenting to the ED between 07/01/2012 to 06/30/2015 who had a floor to ICU transfer in the first 24 hours of ED admission had a review by a member of the QA committee. These cases