(i.e., sales). These studies failed to distinguish among the multiple unique products characterized as "energy drinks" (beverages, shots, and concentrates) and are confounded with caffeine-containing supplements (caffeine tablets, workout powders). Energy beverages dominate the market.

Design and Method: We performed a five-year database query of single-substance exposures to products described as "energy drinks" on the Texas Poison Center Network's database. We analyzed the data for product type, multiples of recommended serving size consumed (dose), adverse outcomes, management site, and demographics. Individual case report forms were reviewed for moderate or major outcomes or death. We obtained five years of Texas sales data for "energy beverages."

Results: From 01/01/10-12/31/14, we recorded 855 exposures to all products characterized as energy drinks (excluding those with ethanol or without caffeine). Of those exposures, 291 (34%) resulted in no or minimal effects and 417 (49%) were judged to be nontoxic or minor exposures not followed to a known outcome. Sixty-four (7.5%) were coded as moderate, and four (0.5%) major with no deaths. Serious complications included two self-limited seizures and one brief episode of ventricular tachycardia. Of the moderate and major cases, 32 (47%) occurred in children and adolescents. Common findings included nausea, tachycardia, and tremors. Energy beverages were associated with three moderate and no major cases, none in children less than 17 years. For all energy beverages, incidence rates of calls to Texas poison centers for moderate and major outcomes were 0.58 and 0.053 per hundred million units sold, respectively.

Conclusion: Serious toxicity can occur after excessive use of caffeine-containing products. With substantial variability of products described as "energy drinks" in poison center data, misperceptions of toxicity in post-marketing surveillance exist. Readers must consider the limitations and potential errors inherent in the data collection and coding of aggregate poison center data.

17 Implementation of a Flow Nurse to Increase Emergency Department Space Utilization

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Objective: Emergency department (ED) volumes continue to increase, with space often being a barrier to throughput. Most EDs have a resource nurse who serves many functions including maximizing space utilization in the ED. This study was performed to analyze if a dedicated "flow nurse" would affect utilization of ED space.

Design and Method: This was a before and after study, conducted at an academic hospital that has an ED with 55 beds and 20 sanctioned hallway spaces, seeing a volume of ~57,000 patients a year. The before phase (07/01/2016-08/30/2016) involved having a resource nurse who served multiple functions, only one of which centered on ED throughput. The after phase (09/01/2016-10/31/2016) featured a separate "flow nurse" from 11AM to 11PM Monday through Friday. Their responsibility centered on maximizing space utilization in the ED and ensuring efficient throughput. The outcome measure we compared was the number of minutes per hour where there were more than five patients in the waiting room, no patients inside the ED waiting to be seen by physicians, and less than 56 patients in the ED under evaluation. We termed this the utilization metric (UM). We used linear regression to test for a significant association between the UM and the presence of a flow nurse adjusting for confounders such as day of week, hour of day and month. Another outcome measure we compared was the left without being seen (LWBS) rate. We performed Fisher's exact test to test for significance.

Results: We compared a total of 1,032 hours, 516 in both the before and after group. The UM improved an average of 205 minutes for the 60 hours per week when a flow nurse was on duty. We performed linear regression with the UM as the dependent variable and with the independent variables of day of week, month, hour of day, and presence of flow nurse as covariates. Presence of flow nurse was significantly associated with an improvement of UM ($p < 0.001$), even adjusting for the other covariates. The other significant variable, hour of day, had a $p = 0.01$. During the before phase a total of 4,022 patients were seen, with 87 LWBS (2.2%). The after phase had a total of 4,346 with 110 LWBS patients (2.5%). Fisher's exact test yielded a $p=0.25$.

Conclusion: While the presence of a flow nurse did not significantly affect the rate of LWBS, it did significantly impact utilization of ED space to more effectively bring patients from the waiting room into the ED to be evaluated.

18 Bedside Ultrasonography for the Detection of Aortic Dissection in the Emergency Department

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Objective: Aortic dissection (AD) is a potentially life-threatening emergency requiring a high index of clinical suspicion. The most reliable diagnostic test is computed tomography (CT) angiography. Transthoracic echocardiography (TTE) has a lower sensitivity. We

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