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

are automatically flagged for review by the ED information management system. The primary outcome measure is AEEs as adjudicated by the whole QA committee for those cases that screened positive by individual reviews. Adverse events are defined as events or circumstances that caused patient harm. Errors were defined as patient care that violated the standard of care as determined by the QA committee. The variable of primary interest is EM PGY level. The expected number of AEEs per EM class was calculated by taking the total number of AEEs and dividing by 3. Chi squared test was performed to test the null hypothesis that there is no difference between EM PGY level and AEEs.

Results: A total of 1769 cases were screened as floor to ICU transfers within 24 hours of the ED. Of these 29 were attributed to be an AEE due to EM residents by the QA committee. This represents an AEE rate of 1.6%. Eight were by PGY1, 19 were by PGY2 and 2 were by PGY3. Chi squared test yielded a $p < 0.001$, rejecting the null hypothesis.

Conclusions: There is an association between PGY level and AEEs of floor to ICU transfers. This is likely due to the increased acuity and complexity of patients seen by the PGY 2 resident. However it may be due to decreased supervision of PGY2 residents and may present an opportunity for improvement.

23 Door to Balloon in Patients with ST Elevation Myocardial Infarction: Minding the Gap

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Background: Delayed diagnosis in patients with ST elevation myocardial infarction (STEMI) still represent a blind spot in the assessment of quality healthcare indicators.

Objective: We aimed to evaluate a "fast-track" intervention intended to shorten door-to-balloon waiting times in patients presenting to emergency department (ED) triage with STEMI.

Design & Method: In 2016, a "fast-track" intervention program for patients with chest pain was implemented in the ED at Rambam Health Care Campus. We determined a set of clinical guidelines for patients' assessment as follows: 15 minutes to triage, 10 minutes to electrocardiogram (ECG), 40 minutes for physician assessment, 60-minute waiting time for decision and 90 minutes to catheterization lab (door-to-balloon time). The program was comprised of four steps:

1. Laying the patient immediately. Or: Laying the patient down immediately
2. Marking the chart with a dedicated sticker (Figure 1).
3. Assessing time lags according to defined clinical guidelines.
4. Signing of the ECG and the dedicated sticker by a physician (Figure 2).

We conducted a retrospective-archive study between January 2015 and December 2016 to evaluate the intervention program achievements. We compared the adherence to clinical guidelines between all STEMI patients (n=140) who presented to the ED before (i.e., in 2015, n=60) and after (i.e., in 2016, n=80) implementing the intervention. We used a lift chart and receiver operating characteristic (ROC) curve to determine the optimal time lags in the ED for achieving the objective of 60 minutes for evaluating the patients in the ED.

Results: Table 1 presents the adherence to time lags pre- and post-intervention. After implementing the intervention more patients reached ECG evaluation within 10 minutes (57.5%) compared to pre-intervention (40%) ($p=0.04$); and more patients remained in the ED less than 60 minutes (87.5% and 63.3%, respectively, $p=0.01$).

Table 2 describes the time lags in relation to clinical guidelines before and after intervention. It clearly appears that when comparing post- to pre-intervention, the time lags (in minutes) were of shorter duration after the clinical guidelines were put in place.

Figure 3 shows that patients who were treated in the ED according to the three clinical guidelines (15 minutes for the nurse, 10 minutes for ECG and 40 minutes for the physician), had the largest probability to uphold the 60-minute waiting time in the ED (AUC=0.975).

Conclusion: Implementation of "fast-track" management for patients with chest pain to provide early diagnosis of STEMI shortened the waiting time for catheterization. The findings call for implementing programs that identify patients at risk for STEMI in ED triage and begin interventions as quickly as possible to reduce time lags for reperfusion for these patients.

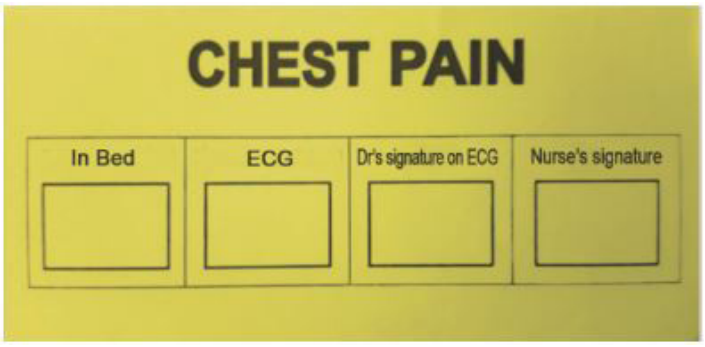

Figure 1.