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Other

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285 Care for the Detainee in the Emergency Department Utilizing Simulation



Elue J, Vasa A, Winfield A, Amin D/Cook County Health, Chicago, Illinois, US

Study Objectives: Incarcerated patients represent a vulnerable population known to have an elevated burden of chronic disease and lower socioeconomic status. Mass incarceration in the United States leads to 10.9 million people passing through its jails, 6.7 million under correctional supervision, and 650,000 people returning to the community each year. The legal right to health care for incarcerated patients was established in 1976 but equitable and empathetic treatment by clinicians demands greater attention. Emergency medicine resident education has a persistent and notable gap in understanding health care for persons impacted by incarceration. Currently there are no published simulation scenarios aimed at teaching emergency medicine residents the health care disparities as well as patient rights of detainees, and techniques for intervening when witnessing discrimination.

Although implementing educational experiences in correctional health imposes unique challenges such as security concerns and logistical access to trainees, we identify the utilization of simulation to improve patient communication and improve safety and security when caring for patients in the correctional setting.

Study Design/Methods: The simulation was created as a part of emergency medicine intern orientation at a large county hospital that serves as the primary health care facility for a large detainee population. The scenario and learning objectives were created by a simulation trained emergency medicine attending and reviewed by an emergency medicine attending physician with expertise in caring for incarcerated patients. 17 learners were split into groups of no more than 4 and assigned a 30-minute time slot in which to complete the simulated case and a debriefing session. The simulated scenario used a live simulated patient and three confederates to serve as law enforcement and a nurse. To increase fidelity the patient wore handcuffs. Law enforcement were given badges and wore darkly colored clothing.

Learners completed an anonymous pre and postintervention survey to assess knowledge. The survey was deemed IRB exempt.

Results/Findings: During the scenario case, facilitators noticed there was significant disagreement as to whether the patient could leave against medical advice, if law enforcement could be removed from the patient's room with 50% of the teams electing to remove police from the room. All learners continued to appropriately evaluate the patient despite bias being introduced by confederates and none agreed to a drug screen as requested by police. Notably in all simulated sessions, multiple inappropriate comments include biased, discriminatory behaviors were tolerated by residents before appropriate intervention.

The survey revealed improvement of knowledge of detainees' ability to leave against medical advice, the consent process for drug screening for law enforcement, and the limitations of timely transportation to emergency department.

Conclusion: There is a paucity of formal education on caring for incarcerated patients in emergency medicine residency training. We describe how simulation-based education can improve the care for detainees with a specific focus on patient autonomy and managing difficult interactions with both clinical staff as well as law enforcement. We believe a similar methodology can be applied in the future to other vulnerable patient populations in hopes of improving disparate ED care.

Table 1

The table below displays the percentage of respondents with correct answers before and after the simulation.

Survey Questions	Pre-Simulation	Post-Simulation
Detainees cannot leave hospitals against medical advice.	5.89%	47%
Detainees can refuse medications, diagnostic testing, or procedural interventions even if they are deemed medically necessary.	100%	100%
Detainees in jail have been convicted of a crime.	100%	100%
Patient who is a detainee has a lower likelihood of a chronic condition than the persons in the general United States population.	100%	100%
Officers accompanying incarcerated patients should be included in the medical decision making.	100%	100%
Timely transportation to hospitals from jail is not a barrier for the care of a detainee patient.	88%	100%
Detainee patients need to consent to toxicologic or other drug screens for law enforcement.	52.9%	70.5%

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286 Trends in Trauma Admissions and Severity at a Level II Trauma Center During the COVID-19 Pandemic



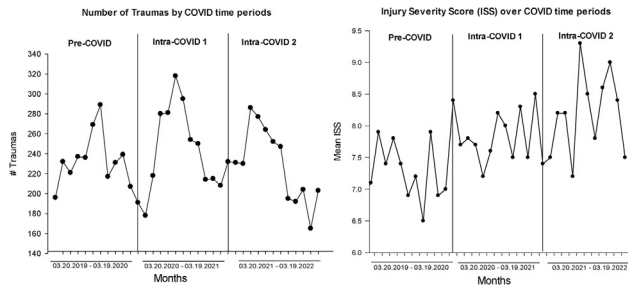
Hartman R, Salvator A, Rink C, Wilber S/Mt. Carmel Hospital System/Mt. Carmel East, Columbus, Ohio, US

Study Objectives: To characterize the impact of the COVID-19 pandemic on trauma admissions and outcomes at a large, Level II Trauma Center that services a metropolitan area.

Study Design/Methods: The study is a retrospective review of emergency department trauma patient data from an urban, Level II Trauma Center in Columbus, Ohio. Data were grouped into 3 time periods reflecting (1) the year prior to the COVID-19 pandemic (Pre-COVID; March 20, 2019 – March 19, 2020), (2) one year after the start of COVID-19 lockdowns (Intra-COVID 1; March 20, 2020- March 19, 2021), and (3) the second year of the pandemic following lockdown (Intra-COVID 2; March 20, 2021-March 19, 2022). The primary outcome assessed was the number of trauma admissions per month. Secondary outcomes included injury severity score (ISS) and incidence of blunt versus penetrating trauma. Characteristics of trauma patients admitted during the Pre-COVID period were compared with patients presenting during the Intra-COVID periods. Categorical data were compared with χ^2 and Fisher's exact tests, and continuous data were assessed with One-way ANOVA and Kruskal-Wallis tests when appropriate. All analyses were conducted using SAS 9.4 (SAS Institute, Cary, NC) with two-sided p-values <0.05 considered statistically significant.

Results/Findings: A total of 8349 trauma admissions (median age 60 years; 51% male) were included in the final analyses. There were no differences in age, sex, and race of trauma patients presenting to the Level II Trauma Center during the study time periods. Relative to the Pre-COVID data, the number of trauma admissions increased (9%) during the Intra-COVID 1 period (2695 vs 2932, $p < 0.0001$), with concomitant higher acuity evidenced by a 7% increase in mean ISS score (7.3 ± 6.9 vs 7.8 ± 6.9 , $p = 0.0009$). There was a modest, but significant increase (2695 vs 2722, $p = 0.001$) in trauma admissions during the Intra-COVID 2 period as compared to the Pre-COVID period as well; with concomitant higher acuity reflected by an 11% increase in mean ISS score (7.3 ± 6.9 vs 8.1 ± 7.2 , $p < 0.0001$). During both Intra-COVID periods, there was a significant increase in penetrating traumas as compared to the Pre-COVID period (4% Pre-COVID vs. 7% Intra-COVID 1 and 2, $p = 0.001$).

Conclusion: Review of emergency department trauma data demonstrated an increase in trauma admissions, acuity of injury and an increase in penetrating trauma, at a community hospital level II trauma center, during the COVID-19 pandemic period, when compared to the pre-pandemic period. This data could have significant implications, especially in trying to understand the impact the pandemic had on society, and community hospitals with a level II trauma designation.



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287 Influence of Time to Diagnosis on Time to Percutaneous Coronary Intervention for Emergency Department ST Elevation Myocardial Infarction (STEMI) Patients: Door to ECG Matters



Yiadom MY, Gong W, Bloos S, Liu D/Stanford University, Palo Alto, California, US

Study Objectives: Earlier percutaneous coronary intervention (PCI) for patients with ST-Elevation Myocardial Infarction (STEMI) is associated with improved clinical outcomes, and earlier ECG is associated with earlier PCI. However, the degree to which door-to-ECG (D2E) influences time from ECG to PCI balloon intervention (E2B) is unclear. We sought to evaluate the impact of D2E time on E2B.

Methods: We performed a three-year retrospective cohort study including STEMI patients from 10 geographically diverse emergency departments (EDs) who had an emergent plan for PCI. We excluded patients with a screening ECG completed prior to ED arrival and those whose initial ECG was non-diagnostic. Our primary outcome was E2B. We compared characteristics between patients who achieved D2E within 10 minutes and those who did not (>10 minutes). We defined three clinical process opportunities for a timely ECG: ED intake (0-10 minutes), triage (>10-30 minutes), and main ED evaluation (>30 minutes). We used a linear mixed-effect regression model to evaluate the influence of D2E on E2B with piecewise linear terms for intake, triage, and the main ED evaluation. We adjusted for patient demographics identified upon ED arrival and past medical history. We modeled ED site as a random effect.

Results: We studied 576 patients, and D2E was timely (≤ 10 minutes) in 65.8% (379/576). Among patients with untimely D2E (>10 minutes), median E2B interval was longer compared to those with timely D2E (76 vs 68 minutes, $p < 0.001$). The association between D2E and E2B was only statistically significant in the 11-30 minute "triage" phase where a one-minute change in D2E was associated with a 1.24-minute (95% CI: 0.44- 2.05, $p = 0.003$) change in E2B time (Figure 1).

Conclusion: Patients with an untimely D2E time were more likely to have an increased E2B time. However, the adjusted association was only significant among those diagnosed during the triage phase of care. The greatest opportunity for improving E2B among ED-diagnosed STEMI patients is to capture those currently diagnosed during triage during the preceding phase of care, ED intake.

*The Emergency STEMI Care Network Writing Group includes the following authors:

Maame Yaa A. B. Yiadom¹, Wu Gong², Brian W. Patterson³, Christopher W. Baugh⁴, Angela M. Mills⁵, Nicholas Gavin⁵, Seth Podolsky⁶, Bryn E. Mumma⁷, Mary E. Tanski⁸, Gilberto Salazar⁹, Caitlin Azzo¹⁰, Stephen C. Dorner⁴, Kelsea Hadley¹¹, Sean M. Bloos^{1,12}, Gabrielle Bunney¹, Timothy J. Vogus², Dandan Liu²

Stanford University,¹

Vanderbilt University,²

University of Wisconsin School of Medicine and Public Health,³

Brigham and Women's Hospital – Harvard University,⁴

Columbia University,⁵

Banner Health,⁶

University of California – Davis,⁷

Oregon Health & Science University,⁸

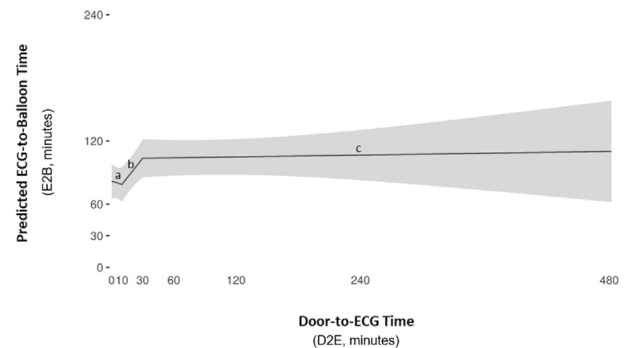
University of Texas Southwestern,⁹

University of Pennsylvania,¹⁰

American University of the Caribbean,¹¹

Tulane University School of Medicine,¹²

Figure 1 – Piecewise Linear Mixed Effects Regression Model for the Association between Door-to-ECG (D2E) and ECG-to-Balloon (E2B) Time



Each piece of the model represents a period of ECG acquisition opportunity within the ED care phase. The 3 ED opportunities include ED intake (a) the first 0-10 minutes, triage (b) 11-30 minutes, and the main ED evaluation (c) >30 minutes. The slope of the line represents the change in E2B for each unit of D2E. We found the only statistically significant association with triage where a one-minute change in D2E was associated with a 1.24-minute change in E2B time.

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288 Relationship Between Socio-Economic Background of International Medical Graduates and Residency Match Results



Hunter D, Anderson J, Campbell R, Mullan A, Homme J/Mayo Clinic, Rochester, Minnesota, US

Study Objective: Up to 25% of practicing American physicians are international medical graduates (IMGs). There are multiple studies characterizing the social and economic background of American medical students and residents. However, studies of IMGs are lacking despite their substantial prevalence in American health care. Little is known about the countries of origin of international physicians and determinants of their success. Our study is aimed to characterize the impact of IMG socio-economic background on the rate residency match success.

Methods: We created a survey with questions on residency match related data and information related to personal socio-economic background. An invitation to participate in the survey was then sent to 4,917 IMGs who applied to 7 specialties with highest number of matched international residents (according to National Residency Match Program 2021 data) within our institution in 2022 residency match. Other residency programs were excluded to prevent accidental identification of the participants and due to small number of potential IMG respondents. Each item was compared between the matched and unmatched groups using two-sided Kruskal-Wallis, Chi-squared or Fisher's exact tests.

Results: A total of 442 survey responses were recorded (response rate 8.98%). 48% of the respondents identified as females, 52% as males, mean age 29.2 +/- 4.4. There were 326 (73.8%) respondents who reported securing a residency position and 116 (26.2%) who did not. There was no difference in personal income between the matched and unmatched graduates — 25.6% of matched respondents reported personal income slightly or significantly higher than other people in their city vs 22.8% of unmatched respondents ($p = 0.637$). However, family income while growing up was significantly higher for matched graduates. A total of 51.1% of matched residents reported their family income was slightly or significantly higher than other people in their city, compared with 37.7% of unmatched graduates providing the same responses (OR = 1.72, 95% CI: 1.11 - 2.67, $p = .014$).

Unmatched graduates reported investing more during the match process with 52.6% of unmatched graduates indicating that they spent more than 1 year of income during the process compared to 38.6% of matched graduates ($p = .013$). Parental occupation also differed between matched and unmatched graduates. Matched graduates were more likely to have at least one parent working in health care or social services compared to unmatched graduates (OR = 1.89, 95% CI: 1.12 - 3.18, $p = .016$). USMLE Step 1 scores were also higher among the matched applicants compared to the unmatched applicants with score of 230 or higher associated with significantly improved chance to match (OR = 3.71, 95% CI: 2.37 - 5.82, $p < .001$). Similar