

1 Implementation of Vertical Split Flow Model for Patient Throughput at a Community Hospital Emergency Department

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Objectives: The objective of this study was to evaluate the impact of vertical split flow (VSF) implementation on emergency department (ED) patient length of stay (LOS) and throughput at a community hospital.

Background: Hospitals have implemented innovative strategies to address overcrowding by optimizing patient flow through the ED. Vertical split flow (VSF) refers to the concept of assigning patients to vertical chairs instead of horizontal beds based on patient acuity.

Methods: This was a retrospective cohort study of all emergency severity index (ESI) level 3 patients presenting to a community hospital ED over a three month period before and after VSF implementation between 2018 and 2019. A vertical area with 10 chairs was separated from the existing ED space and staffed by reassigned advanced practice providers. On arrival, ESI level 3 patients were assigned to the vertical area if they could maintain sitting position during treatment, did not require cardiac monitoring or airborne precautions, and presented no detectable risk of harm to self or others. Unpaired t-tests compared time intervals between cohorts with the primary outcome being ED LOS, as defined by the electronic medical record timestamps for patient arrival to disposition. Secondary outcomes examined throughput using time from patient arrival to bed placement and provider assignment.

Results: In total, 5,262 patient visits in the pre-intervention and 5,376 in the post-intervention group were included in the analysis. There were no significant demographic differences between the two groups. There was a significant reduction in mean overall LOS in minutes between the pre-intervention group (M=283, SD=1.9) and post-intervention group (M=251, SD=1.8), $t(10545)=12$, $p<0.001$. There was also a significant reduction in arrival-to-bed (M=9.2, 95%CI 7-11, $t(9268)=9.8$, $p<0.001$) and provider assignment to disposition time (M=31.9, 95%CI 26-36, $t(10355)=12$, $p<0.001$) in minutes with VSF implementation. There was no significant difference in time from arrival to provider assignment (M=0.64, 95%CI -1.2 to 2.4, $t(10237)=-0.64$, $p=0.525$), despite a small increase in bed to provider time.

Conclusion: Community hospital ED implementation of VSF for ESI level 3 patients was associated with significant reduction in overall length of stay and improved throughput. This model provides a solution to increase the number of beds in the ED and improve throughput for urgent acuity patients.

2 Efforts to Diversify Faculty Within Emergency Departments: A National Survey of Department Heads

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Objectives:

1. To determine how diverse are emergency departmental faculty nationally
2. To determine what modalities emergency medicine department faculty are utilizing to achieve diversity within their departments
3. To determine how effective those modalities have been in achieving diversity in emergency medicine departments

Background: There has been a growing amount of evidence that clinician bias, racism, inequality, stereotyping, and discrimination has indeed contributed to health inequities. These variables have been proven to have negative effects on patient care and health outcomes. Countless studies have shown that diversifying the physician workforce can produce better patient outcomes and decrease the number of health disparities. Patients are more likely to communicate a higher level of care satisfaction when treated by health professionals who share the same racial, ethnic, or cultural background as them. Although many health centers, hospitals, and divisions are determined to promote diversity among their faculty and staff, minority representation has made very little progress. This study aims to determine how diverse are Emergency Medicine departments nationwide, how is diversity being promoted, and how effective are those methods.

Methods: This is a national convenience sampling of 263 Emergency Medicine department heads including medical directors, section chiefs, and department chairs. A REDCap based questionnaire was developed and distributed to the listserv. Participation was tracked and weekly follow-up reminders were sent to participants. Interim analysis was conducted on participants. All statistical analyses were carried out in SAS 9.4. Fisher's exact tests were used to assess the associations between variables.

Results: For the interim analysis, we look at the first 24 responses which consisted of 17 males (70.8%) and 7 (29.2%) females with aligning gender identity. Participants were white (91.7%), black (8.3%), and Hispanic/Latino (4.2%). Looking at suburban vs urban programs where 3 to 5, 6 to 10, and > 10 physicians of color were hired, suburban (0, 0, 0) vs urban (4, 3, 3) respectively; ($p=0.0483$).

Conclusion: Upon assessing the first 24 respondents for this interim analysis, we can conclude that 66.7% of the participants classify as white males. While 66% of the leaders who were non-white hired 6 to 10 physicians of color, only 5% of white leaders hired 6 to 10 physicians of color. When

asked how successful their efforts were to diversify their staff, 3 respondents reported that their efforts were very successful and 20 reported either partially or not very successful. There was an association between the type of location (suburban vs urban) and the number of physicians of color hired when looking at programs that hired 3 or more physicians of color.

3 Emergency Nurses' Perceptions of Opioid Use Disorder and Its Treatment in the Emergency Department

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Objectives: To describe the knowledge and attitudes of emergency nurses regarding caring for patients with opioid use disorder in the emergency department.

Background: Many eligible patients with opioid use disorder do not receive available emergency department services for treatment and harm mitigation. While prior study examined contributing provider factors, little is known of nursing factors. This study describes knowledge and attitudes of emergency nurses regarding patients with opioid use disorder and their evidence-based treatment services in the emergency department setting.

Methods: Anonymous email surveys with novel and previously validated questions based on The Theory of Planned Behavior Framework were distributed to emergency department nurses at a large, urban tertiary-care hospital. Chi-Square and independent samples t-tests were used in analyses.

Results: More than one third of nurses completed the questionnaire (39%, 85/218). Most showed willingness and confidence screening for substance use disorder (95% and 88% respectively). Higher confidence providing buprenorphine and take-home naloxone was significantly associated with having worked fewer years (8.33 v. 15.62, $p=0.01$ and 7.38 v. 12.03, $p=0.03$ respectively). Confidence administering buprenorphine was significantly associated with receiving in-service training ($p=0.03$). Staff with knowledge of take-home naloxone, positive attitudes toward syringe service programs, and a belief in a biopsychosocial basis of addiction were significantly younger and had worked significantly fewer years than those not indicating these beliefs. Specific educational gaps were identified.

Conclusion: Emergency nurses display willingness to champion evidence-based care for patients with opioid use disorder. Younger age and having worked fewer years were significantly associated with positive attitudes towards recovery science, harm mitigation, and services knowledge. Having worked fewer years was significantly associated with greater confidence performing treatment and harm mitigation. In-service training was significantly associated with greater confidence administering buprenorphine. Further study

should support generalizability and determine which staff development measures generate improved outcomes.

4 Effect of the COVID-19 Pandemic on ED Adult Psychiatric Visits

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Objectives: Our goal was to determine whether the proportion of ED visits for specific psychiatric conditions, namely anxiety disorders, depression, self-harm/suicidal thoughts, bipolar disorder, and psychotic disorders, changed after the arrival of COVID-19.

Background: In March 2020, the COVID-19 pandemic reached the New York tri-state area, which, at the time, was one of the regions in the United States (US) that the virus most severely affected. ED visits dramatically declined, likely due to social isolation mandates and fear of exposure to the virus. Quarantining at home, fear of becoming sick, and job disruptions caused the level of stress in the population to increase. In a previous US study, the proportion of ED visits for some psychiatric conditions increased.

Methods: Design: Retrospective cohort. Setting: EDs of 28 hospitals within 150 miles of New York City. Hospitals were teaching and non-teaching in rural, suburban and urban areas. Total annual ED volumes were 12,000 to 122,000. Population: Consecutive ED patients = 21 years old from March 1 to November 30 in 2019 and 2020. Data analysis: We tallied the number of patients in 2019 and 2020 with anxiety disorders, depression, self-harm/suicidal thoughts, bipolar disorder, and psychotic disorders, identified using International Classification of Disease codes (version 10). We calculated the proportion of these visits to total ED visits in 2019 and 2020. We report the changes in these proportions from 2019 to 2020, along with 95% CIs.

Results: Total ED visits decreased 27%, from 844,017 in 2019 to 618,195 in 2020. In 2019 and 2020 combined, the number of patients were: 13,151 with anxiety disorders, 6884 with depression, 8886 with suicidal ideation/self-harm, 3252 with bipolar disorder, and 7129 with psychotic disorders. The changes [with 95% CIs] in the proportion of visits from 2019 to 2020 were: anxiety disorders -1% [-4,+3%], depression -5% [-10,-1%], self-harm/suicidal thoughts +23% [+18,+29%], bipolar disorder +14% [+6, +22%], and psychotic disorders +23% [+18,+29%].

Conclusion: The proportion of adult ED visits for self-harm/suicidal thoughts, bipolar disorder, and psychotic disorders increased following the arrival of COVID-19, whereas the proportions for anxiety and depression changed minimally. These results are somewhat different from the findings in the previously reported study. Our study highlights the need for continued surveillance of the impact of