Creating a Split-Flow Model for Level 3 Emergency Department Patients

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Clinical Problem/Significance:

The purpose of this project was to implement a method to decrease the level 3 emergency department (ED) discharged patients' length of stays (LOS). A secondary purpose was to reduce our left without being seen (LWBS) level 3 patients. Prolonged wait times and length of stays have inundated EDs across the nation. A level one trauma academic teaching facility in Central Texas has struggled with these same hurdles in its ED over the past few years. Specifically, patients that are assigned emergency severity index (ESI) level 3 have overwhelmed our department by increasing wait times and LOS.

Background:

Databases were examined for information focusing on the problem. A split-flow model was determined beneficial for ED efficiency by creating a second ED flow stream parallel to the regular care flow stream for patients with less complex problems. Pierce & Gormley (2016) and Desota & McAuley (2012) support the theory that the split-flow model significantly improves key ED performance metrics such as average LOS and door-to-doctor time. Immediate bedding is associated with increased patient satisfaction and a marked decrease in door to physician time (Flood et al, 2016). Research shows that direct bedding and bedside triage has been effective in improving ED efficiency and increasing revenue for the ED and facility (Mandavia & Samaniego 2016).

Clinical Question:

Do level 3 patients who are systemically processed in a fast track venue (split-flow model) versus those level 3's who are not processed this way have decreased LOS?

Description of Evidence-Based Protocol:

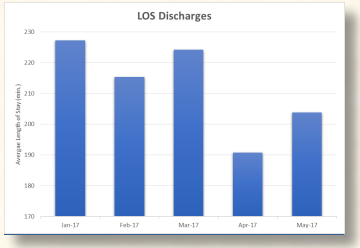
A split-flow ED consists of a main treatment area where life threatening emergencies are evaluated next to a coexisting fast track area (urgent care). In our ED a second fast track area was developed to evaluate level 3 patients referred to as a focused fast track (FFT). A designated nurse and physician were assigned to run a level 3 FFT in conjunction with the existing fast track managed by advanced practice providers. Triage notes and vital signs were reviewed to decide whether the patient met criteria for this FFT. After treatment, patients were either discharged or placed in a main treatment area ED room for further evaluation.

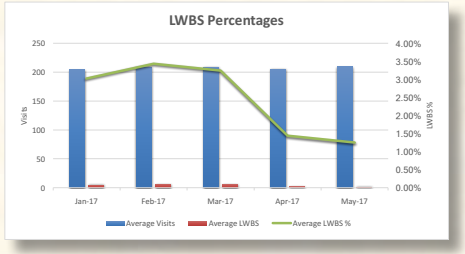
Implementation of Evidence-Based Protocol:

This project was conducted over an eight month period. During that time, total number of ED patients seen was 42,898 and approximately half of those were level 3 patients. Inclusion criteria focused on ESI level 3 patients who could be evaluated in a FFT that do not require close monitoring. These patients required three or more interventions with minimal monitoring and anticipated discharge. Exclusion criteria included level 3 patients with multiple comorbidities requiring a more complex evaluation in an ED room and likely requiring admission.

Results:

Our pre-intervention average LOS for level 3 patients discharged from the ED was **262 minutes**. After implementation of the project the average LOS for the first two months when the split-flow was only in operation two days a week was **203.6 minutes**. For the next six months when the split-flow model was in operation daily it was **212.28 minutes** (See Graft LOS Discharges). In addition, our LWBS decreased and patient satisfaction scores increased. The pre-intervention LWBS average was 4.33%. For the first two months after implementation it was 1.8% and then was 2.5% for six months after that. (See Graft LWBS Percentages) Patient satisfaction increased from 79.1% to 87.5% (n=78) for the first two months after implementation. Patient satisfaction scores for the subsequent six months were not available at the time of the poster submission deadline. However, there are indications these scores remain higher than the pre-intervention scores. There was a cost savings related to LWBS of an average of $2000 per patient.





Conclusions/ Discussion:

The average LOS decreased between 50 to 60 minutes after implementing a split-flow model. This suggests that systematically processing level 3 patients in this manner results in a shorter LOS. Also, findings indicate that a split-flow model may help decrease LWBS when comparing pre/post intervention percentages. Although there was some increase in both measurements in the three months after transitioning from having the split-flow model two days to daily, this may be more of a reflection on variables unrelated to the project. During these three months there was an increase in ED admissions due to a region wide spike in the number of flu and upper respiratory infections. Despite that, the LWBS and LOS remained lower than the pre-intervention measurements.

Implications for Emergency Nursing Practice:

A split-flow model for processing level 3 patients may have a very positive impact in a myriad of ways. Shorten LOS means that precious ED rooms/beds are freed up more quickly which may decrease the wait time for ED patients to be processed and treated. This could help decrease stress and frustration for both the patients/families and ED staff. Also, EDs which demonstrate they can care for patients in effective and efficient manners may have a huge impact on the fiscal health of a facility plus receive positive ratings when being reviewed by regulatory and consumer agencies.

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The team would like to thank Sandra Goff, BSN, RN for her contributions to this project.