



## TRIGGER/OPPORTUNITIES

### *The Problem*

Critical care continues to be a growing proportion of emergency medicine. Lack of critical care inpatient beds contributes to prolonged emergency department length of stay (EDLOS) and ED overcrowding, both of which have well documented negative consequences for patients, staff, and hospitals. Much has been published on the political, social, economic, and administrative factors contributing to this global problem, but very little has been reported on effective nurse driven models to decrease EDLOS and further contribute to positive outcomes for this patient population.

In our hospital, it was found that even when a critical care bed became available, there was a significant delay in getting the patient to the unit, thus further prolonging their EDLOS.

### *Organizational Priority*

Quality & Safety: Reducing EDLOS is associated with improved ICU LOS, improved hospital LOS, decreased mortality, decreased adverse events/preventable medical errors, and decreased ED crowding (directly compromises quality and safety); Face to face bedside report is an evidenced based practice to improve the effectiveness of communication between caregivers, a Joint Commission National Patient Safety Goal; a prior study has shown safety benefits of initiating report in the ED; Transitioning a patient to the critical care unit allows for the appropriate staffing ratios needed to sustain the resource intensive care they require, but is not typically allowed for in the ED setting; Timely transport by inpatient staff improves availability of ED clinicians to focus on providing appropriate care for remaining and incoming patients

Patient Experience: Prolonged EDLOS decreases patient satisfaction due to lack of comfort (bed versus stretcher), privacy (curtained rooms, no bathroom), accommodations for visitors, and excessive noise; Bedside report has been shown to increase patient satisfaction; Sustained optimal critical care delivery distracts and limits the time, and perceived quality, of care that can be provided to other ED patients.

Teammate Engagement: Organizations with strong hand-off communication processes in place have reported increased staff satisfaction; Open communication and understanding of roles between departments prevents silos and improves staff engagement; Collaboration in process change improves engagement.

Efficiency: Uses LEAN methodology to improve efficiency of transfer process; Clean, ready, unoccupied room is a loss of hospital revenue; ED bed occupied by an inpatient prevents .33 ED patient visits per hour; prolonged EDLOS/"boarding" is directly related to revenue loss from decreased ED throughput and patients who leave without being seen; increased ICU complications and increased inpatient LOS have multiple financial implications.

### *The Team*

A team was formed composed of four Emergency Department staff nurses, Emergency Department manager, two Intensive Care Clinical Supervisors, an Educator from each department, an AVP from in-patient and out-patient administration, the Clinical Nurse Specialist for Critical Care Services, a Nursing Supervisor/Flow Director, and the Director of Policy, Clinical Practice, and Nursing Education.

### *Is there Sufficient Research Evidence?*

Studies have found EDLOS to be an independent predictor of ICU mortality in most critical care populations, and almost unanimously in the those >65, the majority of critical care admissions (Akhtar et al., 2016; Mowery et al., 2011). However, definitions of prolonged EDLOS vary across studies (Hung et al., 2014). Traditionally, >6hr has been the benchmark (Rose et al., 2016) but some studies have shown effects of mortality and adverse events to defined populations in as little as one hour (Hsieh et al. 2017). Once increased probability of death and/or adverse event emerges, each subsequent hour imposes a significant difference (Hung et al, 2014). The literature also supports that critically ill patients with prolonged EDLOS are at greater risk for adverse events, have longer inpatient LOS, have delays in implementation of admission orders and treatments, are excluded from early use of protocols (such as skin care and VAP bundles), and have decreased functional prognosis at discharge (Akhtar et al., 2016; Clark & Normile 2007; Cohen et al, 2015; George & Evridiki, 2015; Hung et al., 2014; Mowery et al., 2011). Delays in transfer are most often related to the lack of inpatient beds, but delays continue beyond bed assignment due to the unpredictable and time-sensitive work flow of nurses on both units (Cohen et al., 2015; McFetridge, Gillespie, Goode, & Melby 2007) . Evidence would suggest that improving the time of critical care time spent in the ED may be associated with improved outcome measures for these patients (Akhtar et al., 2016; Clark & Normile 2007; Cohen et al, 2015; Elliot et al., 2015; Hung et al., 2014; Mowery et al., 2011, Rose et al., 2016). However, there is very little research addressing affective nursing driven approaches to reduce this time, particularly from bed assignment. (Elliot et al. 2015).

## DESIGN AND PILOT THE PRACTICE CHANGE

### *Outcome to be achieved*

Goal: "To decrease the time critical care patients spend in the emergency department by October 1, 2017, as measured by decreased time from admit decision to disposition from the emergency department."

### *Design and Implement Project*

With urging and full support from hospital leadership, a multi-departmental nursing team, "One Team", was formed to identify barriers to timely transfer of patients awaiting admission. As a part of this process, nurses completed shadow experiences in each others' departments to gain a better understanding of the goals and challenges facing the nurses on each unit. Numerous items were recognized, and recommendations were taken to the various departments capable of affecting change over those aspects of delay. Nursing identified an opportunity to improve the meaningful exchange of information in the handoff process and impact transfer times of patients admitted to ICU. Due to the high volume and acuity of our tertiary referral ED, once a room was assigned, it was often difficult to leave an everchanging, time sensitive 3-4+ patient assignment for the 25-30 minutes it required to transport the patient to the ICU and give report. A process map was designed for a pilot where the primary care ICU nurse who had a clean, ready, room would use the LEAN concept of "pull", and within 30 minutes of bed assignment (a NHI recommendation), come to the ED, obtain face to face bedside report, and then transport the patient back to ICU. Arrival of the critically ill patient to a critical care unit is an extremely busy time, and by receiving report prior to arrival, the nurse is able to focus on receiving handover rather than beginning the physical care of the patient that occurs once the patient arrives in the unit. This process also allows the ED nurse easy access to the EMR, an important safety component in relaying pertinent information during hand-off. A final patient benefit was that this process allows the ED nurse to remain available in the department, both for remaining patients, but also so that the room can be immediately utilized for another patient requiring urgent stabilization.

A pre and post pilot survey was sent to ED and ICU nurses to obtain subjective data on the process and quality of handoff report.

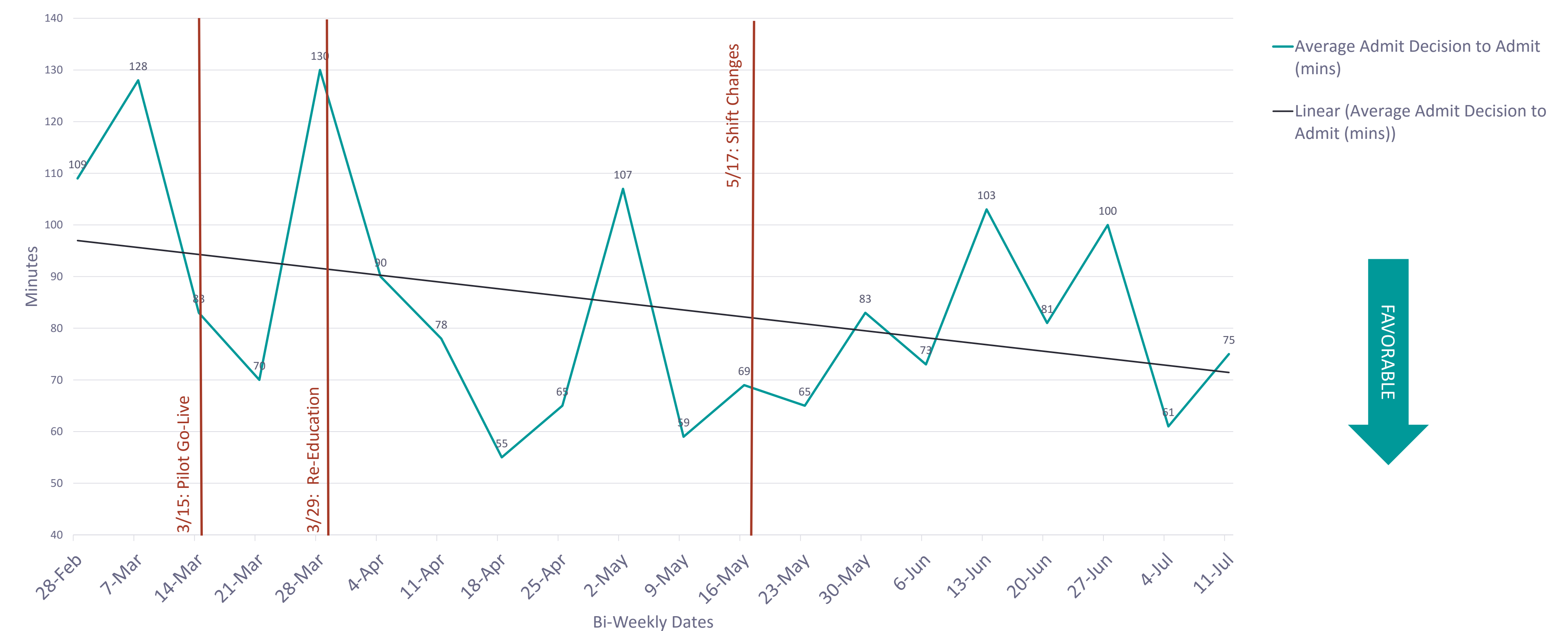
Weekly phone conferences were held to evaluate progress, identify barriers, and refine processes and protocols as needed.

Monthly face to face meetings were held and included representatives from other hospital units who may potentially adopt the process in the future if shown to improve the safety and quality of patient care.

All communication consistently addressed that regardless of any ongoing pilot, we are all responsible for doing what is in the best interest of the patient.

## EVALUATE THE PROCESS AND OUTCOMES

### 2017 CHS NE Average Admit Decision to ED Disposition



### *Compare and Describe the Baseline and Post-intervention results*

- There has been a decrease in the amount of time from "decision to admit" to "disposition from the emergency department" since initiating this process change. Shortly after starting the pilot there was an increase in this data point. Information from our weekly meetings was used to determine cause. Secondary re-education with some modifications in the process map were provided to staff on both units, and the desired change in subsequent data was noted. Final median decrease of EDLOS by 26 minutes.
- There was an improvement in nursing perception of the process and quality of handoff when pre and post survey results compared. Of interest, both units also had improved employee engagement scores, and consistently rated questions related to working with other departments higher than in previous years.

### *Modify Practice due to Lessons Learned*

- Once the pilot was completed, it was determined that the process map needed a third modification to address the hours of 0600-0800 and 1800-2000. Transport still happens during these times, but an open communication occurs between the nurses on each department to determine which teammate is in the best position to expedite getting the patient to their admission bed.
- Although there was a positive improvement in nurses' perceptions regarding the process and quality of handoff, the literature supports standardization of a framework to guide the information communicated.
- During this time, our patient experience/top box scores have been the highest they have ever been. This may be related to increased availability of the ED nurse.
- There has been an overall improvement in understanding the goals of our fellow teammates, and an appreciation for the challenges their particular unit presents. Inter-departmental shadow experiences during orientation would prove to be valuable in preventing silos and fostering teammate engagement.

## INTEGRATE AND SUSTAIN THE PRACTICE CHANGE

### *Next Steps to sustain and integrate OR consider alternatives*

Transport of critically ill patients to the ICU by an inpatient nurse may reduce critical care time in the emergency department, a well evidenced measure to improve the quality and safety of patient outcomes.

Our hospital has maintained an extremely high inpatient census and ED volume through the spring and summer, but ongoing data will have to be collected to determine if trends are seasonal.

Neuro IMC is now coming down to transport patients admitted to their unit. Next steps would be to include other critical care/IMC units (ACCU/CVIMC) in the process change. This may require some unit specific modifications to the process maps.

Use enhanced data collection capabilities of Encompass to track "bed assigned to ED disposition" for a more accurate reflection of nurse driven change.

### *Updated Data (May 2018)*

- All critical care units have now been included in the process change. As predicted, modifications and variations were required for each unit.
- Our bed management software application and processes were changed in November 2017, requiring multiple process map modifications.
- We are now able to measure disposition from the time the bed is ready, giving us a more accurate reflection of nurse driven impact. **Weekly pulse checks (median): July 2017-48.5 minutes, August 2017-39.5 minutes, September 2017-50 minutes, October 2017-50.5 minutes. Complete monthly data (median): January 2018-51 minutes, February 2018-55 minutes, March 2018-58 minutes, April 2018- 50 minutes.**
- The team is continuing to work towards getting this time down to the 30 minute NHI recommendation.

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