

Solution: Using Lean Sigma to Improve the Labor and Delivery Triage Process**Organization:** Johns Hopkins Bayview Medical Center **Type:** Acute Care**Primary Contact:** Susan Will MS, RNC, OB Patient Safety Nurse**E-mail:** swill1@jhmi.edu**Phone:** 410.916.0864**IDENTIFICATION:**

The number of births at JHBMC increases annually while the available space does not change. Recognizing the need to maximize efficiency, the OB Leadership team (we) decided to focus on triage throughput. Over time as the volume and acuity of patients seen in triage has increased but space is limited and the workflow has not been adjusted. The work of triage evaluations requires private rooms for testing and monitoring, sometimes for an extended time. As a result the unit realized an increased length of stay (LOS) for both admitted and non-admitted triage patients. We recognized that long triage LOS times increase safety risks and treatment delays while contributing to patient dissatisfaction. The scope of this project was limited to triage patients from presentation to the L&D unit to disposition, either as an admitted or discharged patient. We wanted to reduce the triage length of stay, while not compromising the level of care provided.

PROCESS:

First, we reviewed LOS data using the existing triage logbook. This first data set demonstrated that while our average daily patient census was 9, a daily census of 15 to 18 was common and there were not any seasonal, daily or weekly patterns for which we could plan. With triage space limited to 3 exam rooms, there were times when there were no exam rooms available for waiting patients. This same data set revealed that the average triage stay was about 2 ½ hours: measuring from patient presentation to the L&D unit to disposition as an inpatient admission or a discharge home.

After obtaining and reviewing additional triage diagnosis data, we set different LOS goals for admitted vs. discharged patients. We decided that one hour was reasonable for the decision to admit a patient while 2 hours was more reasonable to safely determine that an OB patient could be discharged home from triage.

Once LOS goals were set, we again analyzed patient log data and found that disposition times were meeting these goals about 50% of the time. We thought we could improve, so as a team we committed to making a difference and decided to continue our work with weekly meetings.

A triage process time study map was completed relying on the triage bedside care providers to help identify possible delay causes and then we looked for opportunities to address them. One delay identified with this technique was patient flow through triage that is having patients travel from the L&D entrance to the L&D front desk where triage registration takes place. This may seem like an obvious thing, but there were patients that would sit in the waiting room outside L&D without checking in at the front desk, because they assumed that the staff knew they were there. Now there are newly posted signs with clear directions for all patients and because of the

large Hispanic population (40%) these signs are posted in English and Spanish. Staff enlisted the help of patients in determining the best location for the signs.

We also surveyed the staff regarding “Factors Slowing Down the Triage Process”. Factors listed by staff were grouped into categories and addressed based on most common themes and what we thought would have the biggest impact on triage throughput. “Incorrect treatment location” was mentioned most often so this resulted in collaboration with the emergency department to revise the Emergency Department to L&D transfer policy.

In addition, we conducted triage workflow observations found that there were numerous trips to supply areas outside of the triage area. This led us to evaluate room organization and implement new in-room supply carts. Additional improvements included increasing par for equipment and supplies, having primary patient registration assumed by the L&D unit secretary, having the unit secretary request translation support as soon as a non-English speaking patient presented for triage, and transitioning scheduled cesarean birth patients’ pre-operative assessment to the day of surgery.

SOLUTION:

We again reviewed the triage data after implementation of our improvement initiatives. We found that the average triage length of stay went down 35 minutes per visit while the daily triage census went up about 78%! Looking at the original goals for admission (≤ 1 hour) and discharge (≤ 2 hours) follow-up data showed that the number of admitted patients staying in triage longer than 1 hour decreased by 1/3rd so 70% of those cases met our goal while the number of discharged patients staying in triage longer than 2 hours went down by about 1/5th. We were pleased to see that the work we put into changes actually translated into results, especially with the overall increase in the number of triage visits. Also of importance is that staff realized they are empowered to make significant changes to clinical care, while learning that changes take planning, on-going effort and time. Our highly engaged staff generated numerous ideas for follow-on projects. It will be important to re-evaluate the triage data at regular intervals to determine that these results are sustained over time.