



Summary

Organization

BayCare Health System

Industry

Health Care

Business Problem

Loss suffered from ED diverts due to unavailability of inpatient beds

Methodology

DMAIC

Solution

Increase percentage of inpatient discharges that take one hour or less

Benefits/Results

- Increased revenue by \$80,000 annually
- More efficient discharge process
- Better communication with patients and families, and better internal communication

The Challenge

What does inpatient bed availability have to do with an Emergency Department's divert rate? Quite a lot, actually, if the number of people you can accommodate in the ED is dependent on your ability to move patients who require further treatment from the ED to other hospital units. If no inpatient beds are available, patients "stack up" in the ED, and eventually the facility must turn people away.

This was the problem that Black Belt Daniel Walker aimed to alleviate with a DMAIC project to reduce the ED divert rate at BayCare's Mease Countryside Hospital in Florida.

The project goal was to increase by 25 percent the number of inpatient discharges that take one hour or less. This would free up more beds earlier in the day, allowing patients to be moved out of the ED and ultimately reducing the ED divert rate.

The project team included the Director of Nursing, several nurse managers and educators, and volunteer and transportation coordinators. BayCare's Executive Vice President served as the project's Champion.

The Process

Although similar projects had already been completed at other BayCare facilities, the project team went through the due diligence of gathering specific data for Mease Countryside.

The hospital record system showed that the patient discharge process took anywhere from 10 minutes to several hours. The team's goal was to reduce this variability and improve the process efficiency so that most discharges took one hour or less from the time the physician wrote the order until the patient actually left the facility.

The electronic record system also showed that admission volume from the ED to inpatient units

"The data demonstrated that we weren't communicating effectively with the families and caregivers."

— Daniel Walker

Director Six Sigma Methodology Applications
BayCare Health System

started ramping up around 10 a.m. and peaked in the early afternoon. Most inpatient discharges, however, were not occurring until early afternoon. This suggested a secondary goal of increasing the number of discharges completed before 1 p.m.

What the record system did not reflect was the exact time the physician wrote the discharge order — information that was key to improving the metric. So, the team designed a manual data collection sheet that nurses could use to track the time of the order. As Walker recalls, the idea was met with some resistance.

"In any project, change is always the thing you have to manage," he notes. In this case, executive support went a long way toward helping people understand why the manual data capture was important.

During the Measure phase, the team captured data for more than 260 inpatient discharges. Several Six Sigma tools, including a Pareto analysis, regression and a general linear model, helped the team identify the critical inputs contributing to the problem.

The data showed that in 21 percent of the cases, discharges were delayed because the nursing staff was busy attending to other patients. However, the most important factor was patients waiting for a ride home, which occurred 58 percent of the time.

"A patient could be ready to go home and have to wait for hours," says Walker. Instead of labeling this a situation that the hospital had no control over, the team took responsibility for improving communication with patients and their families about the discharge process.

(continued)



Key Tools Used

Define

- SIPOC Analysis

Measure

- Process Flow Diagram
- Fishbone Diagram
- Capability Analysis
- MSA

Analyze

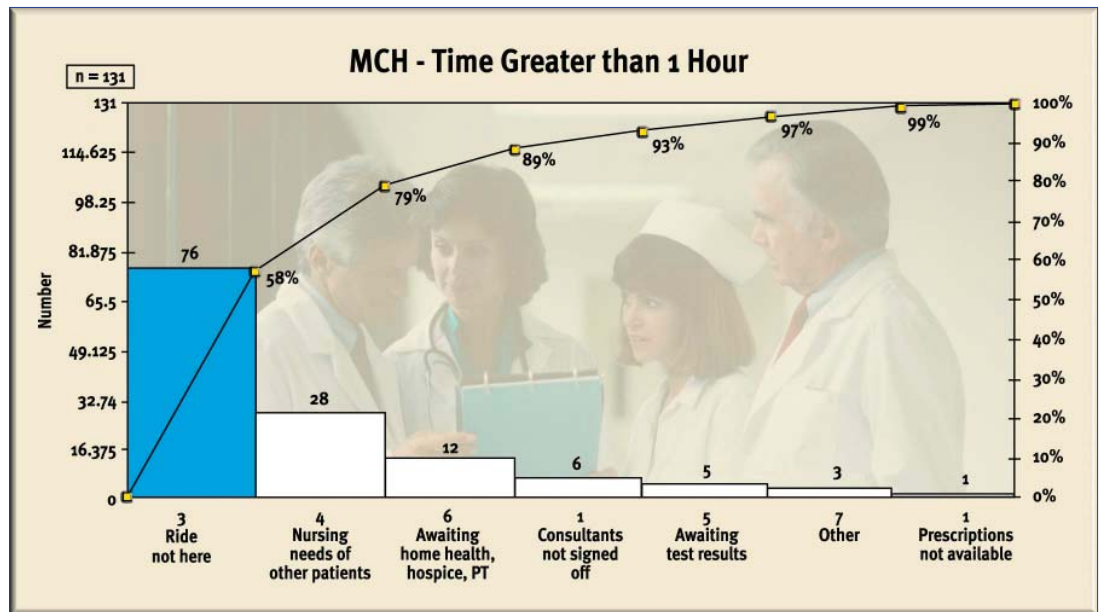
- FMEA
- Pareto Chart
- Regression
- General Linear Model

Improve

- Pilot

Control

- Control Plan
- PTAP
- Updated FMEA
- Updated Process Map



This Pareto chart graphically demonstrates that patients waiting for a ride home was the most significant cause of the defect (discharges taking longer than one hour).

The improvements included collecting ride contact information early in the patient's stay, and a process to make patients and their rides aware of the discharge date ahead of time, as well as at the time of the discharge.

The enhanced communication prompted the staff to hold a daily discharge meeting (instead of two times per week). This change alone helped tremendously, Walker says. It also helped alleviate the other significant factor contributing to discharge delays (busy nurses) by making discharges a priority and improving staff communication.

In addition, each inpatient unit now features a white board that indicates which patients are planned for discharge that day. If the staff discovers that a patient's ride will not arrive in time, they can help the patient take advantage of other transportation options.

On the front end, physicians are asked to document the patient's discharge plan by the second day of their stay, which helps everyone plan in advance.

During the Improve phase, the project team piloted these and other improvements on two units, then added a unit per week until they had

all five inpatient units using the new process. The improvements were well received. The only enhancement concerned making the nurse's data collection sheet as user-friendly as possible.

The Results

The project team met its goal of increasing by 25 percent the number of discharges that take one hour or less. "The team was very pleased that they were able to move the metric," says Walker, recalling that it seemed doubtful at times.

As a result of this project, the facility is on track to realize an additional \$80,000 in annual revenue due to the corresponding decrease in ED diverts.

Similar projects have been replicated at other BayCare facilities. In addition, the organization has completed several other projects in the larger process flow. One project improved the timeliness of cleaning and prepping beds for new patients. Another successfully reduced the cycle time for transferring patients from the ED to the inpatient unit. Each of these projects contributes to BayCare's ultimate goal — a better patient experience. ■

