Ellis Medicine Uses Lean Six Sigma to Create Opportunities out of Problems
2016 savings estimates top $1.8 Million

A GBMP Case Study

Ellis Medicine is a 438-bed community and teaching healthcare system serving New York's Capital Region. With four main campuses, five additional service locations, more than 3,300 employees and more than 700 medical staff, Ellis Medicine offers an extensive array of inpatient and outpatient services.

In 2013 Ellis made a commitment to change the way things get done at the century-old institution, to improve quality of care and financial strength by identifying more efficient processes and cost savings. Kristin May, Director of Organizational Performance and Innovation, leads the project and focused her attention first on building an internal team to apply principles from Lean management and Six Sigma.

From Dynamite to Dyno-mite

The first move was to send a couple of bright, young Lean leaders to a public Six Sigma course at a dynamite facility in Connecticut to learn about the methodology. It didn't take Angelo Paglialonga and Christine Waghorn long to bridge the gap between explosives and healthcare and complete a project on laboratory blood specimen turnaround time (TAT) at Ellis Hospital with savings estimated over $600k annually.

Christine commented “At first it seemed odd to be driving to a dynamite factory to learn about the Six Sigma methodologies we were going to implement in a healthcare setting; but after a few classes, it began to make perfect sense.”

Phase two consisted of creating the six projects on site at Ellis hospital. The teams were mentored by Christine and Angelo in between training sessions, which was instrumental in bringing the projects to fruition. It was through their hard work of creating a ‘dashboard’ for the projects that the savings were validated.

As an advocate for Lean and Six Sigma continuous improvement, May implemented a hybrid of both techniques with assistance from the Greater Boston Manufacturing Partnership (GBMP).

Initially, May and her team of seven part-time and five full-time Lean leaders used their time to introduce the concept of change and the process of continuous improvement to get the nurses, staff and other care providers involved in finding solutions and resolving problems. Together they found a solution to IV pump shortages and saved $500,000. Next the team turned their attention to the hospital’s lab department. By identifying tests that could be done in-house, the lab department saved $1 million. While May’s team brings the tools and the structure and the tracking capability to a department, it is the staffs in each department, and their knowledge of the processes and issues, who conceive of and implement the improvements.

Now May is pleased to say there is a waiting list of those who want to be certified in Lean/Six Sigma - people who have seen firsthand the positive outcomes of these techniques on specific problems and the effect of the new culture of change within Ellis.

The Department of Organizational Performance and Innovation provides three paths for those interested in an education in Lean & Six Sigma: the six phases of the Lean Leader Continued Education path, the four belts of Specialized Six Sigma Training and four levels of qualification in Project Management.

In September of 2015, six teams set out to tackle six difficult projects. In January of 2016, the teams presented their projects to senior management. According to Ron Pujalte, GBMP Continuous Improvement Manager & Six Sigma Master Black Belt: “*Seeing the fruits of their*

labor only makes people want to do more, improve more and work together more. The passion and dedication of this particular group of people is evident in the amount of progress they've made, supported by these amazing report-outs and the pride that radiates because they have made a positive impact on patient's and co-worker's lives."

The six team projects were: Bed & Equipment Rentals, Patient Falls, Pharmacy Calls, Safe Patient Handling, Primary Care Referrals and Structured Interdisciplinary Bedside Rounds (SIBR).

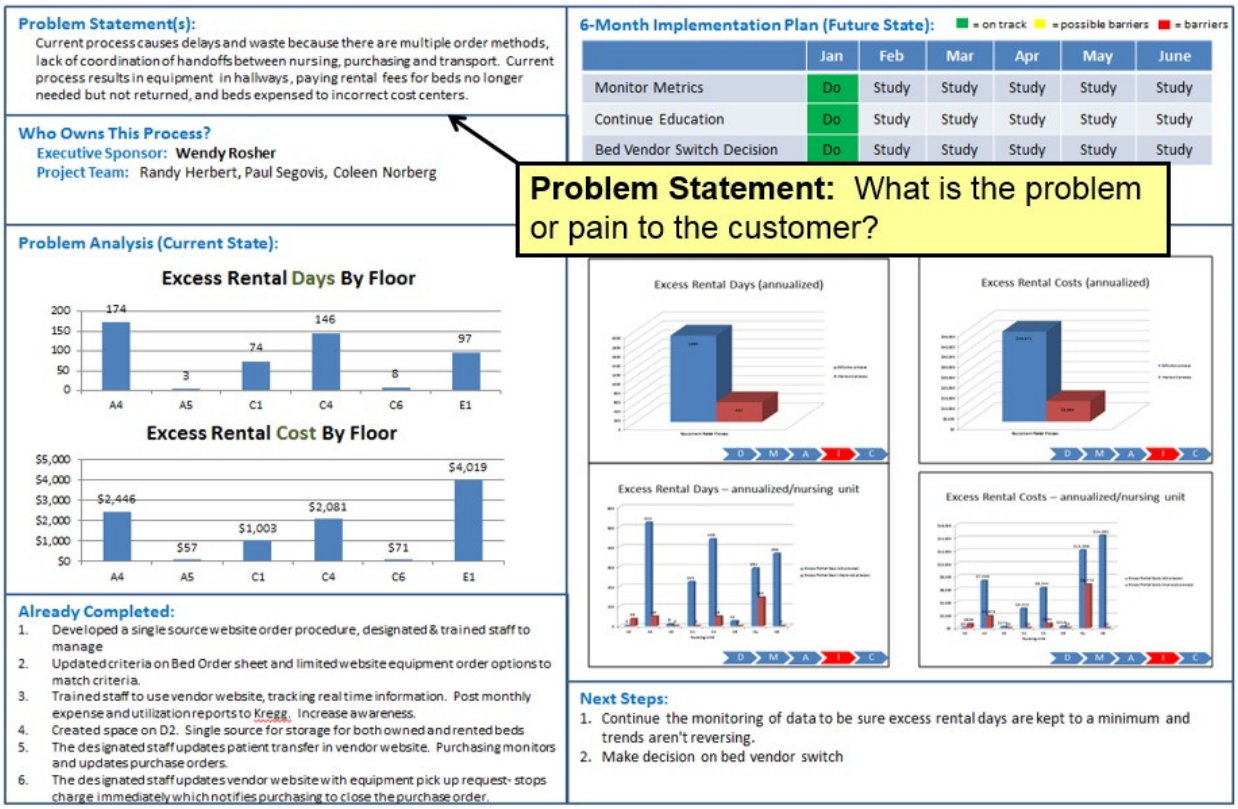
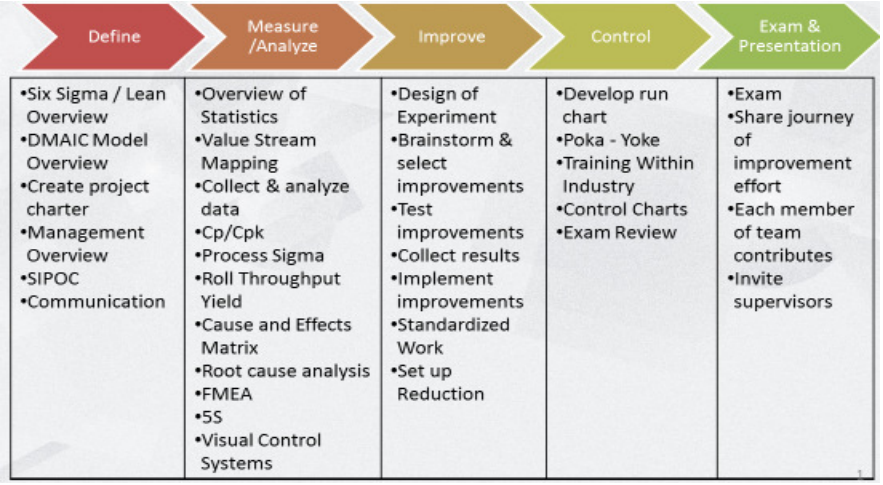


Figure 1: Anatomy of an A3

Each team first identified the unique problem statement for their area of focus as well as a project goal. For example, the SIBR team defined the problem as "inconsistency in attendance, start/stop time, content, tools, level of preparedness and engagement by leadership and staff during morning interdisciplinary rounds." The goal was to improve SIBR's to create opportunities to impact several revenue-saving factors, for example Length of Stay (LOS).

Teams used Six Sigma DMAIC methodology to Define, Measure, Analyze, Improve, and Control their projects and the Lean PDSA approach (Plan Do *Study* Act) to implement countermeasures and effect improvements. An array of techniques from the DMAIC method (shown below) were employed to bring their projects to closure.



The Cost of Poor Quality was validated by the finance department for these projects culminating in an estimated yearly savings in excess of $1.8 million!

Project	Project	if Hospital Wide
Safe Patient Handling	15,334	177,895
A6 Patient Falls	408,751	TBD
SIBR Rounds	76,180	TBD
Bed/Equipment Rental	33,607	33,607
Pharmacy	70,000	70,000
ED Primary Care Referrals	1,250,462	1,250,462
Estimated Totals	$ 1,854,334	

The teams are now working on new projects to further improve the quality and profitability at Ellis Medicine. All in all, the very realistic forecasted savings of the six projects totaled in excess of $1.8 million!

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