

## Lean Transformation Model Brings Increased Quality, Timeliness and Productivity to Hospitals

By: Marypat Cooper\* – March 6, 2012

In 2005, when the leader of a mid-size healthcare organization warned his fellow practitioners about becoming “another ‘Rust Belt’ company,” his associates were somewhat puzzled. What could their rapidly growing practice possibly have in common with the dead and dying industrial giants of the American Midwest? But Mitchell Eisenberg, M.D., knew that his company’s success might well outpace the performance of back office systems. As a tenacious learner about business as well as medicine, Dr. Eisenberg understood that past successes alone would be insufficient defense against newcomers to the field who could quickly study and copy much of his company’s business model. He sought out various experts of turnaround transformation, and along with his executive team, selected a model of lean transformation that would set the organization apart from the competition.

Dr. Eisenberg brought lean thinking to his physician leaders and office executives through the practice of Kaizen over the next 5 years. ***Kaizen means rapid improvement with true benefit,*** and is as simple to describe as it is difficult to practice and sustain. The very core of successful physician thinking is intertwined with individual reliance and accountability, as taught by Art Byrne, a top U.S. lean strategist. Dr. Eisenberg met with Mr. Byrne in Boston where the latter explained that lean transformation could extend and safeguard future company successes.

Dr. Eisenberg returned to his company’s corporate headquarters in Florida with an even higher degree of determination to apply lean transformation to clinical processes. A lean transformation curriculum was developed and introduced to his company’s clinical leadership at their annual Leadership Academy event.

Kaizen was eventually expanded to include clinical settings. Today, corporate and clinical practice management leadership share a common drive towards “50 – 30 – 20 to 5” which means 50% better quality, 30% faster, with a 20% increase in productivity towards 5% growth overall.

The following are relevant case studies highlighting the key transformations various hospitals underwent as a result of a Kaizen lean transformation strategy implementation.

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# CASE STUDY #1

## Emergency Department

### Background

At one South Florida hospital, the process of admitting patients through the emergency room was highly variable and patients had extended waits. The patients admitted into the hospital through the emergency department (ED) had an average length of stay (LOS) of 289 minutes. ED admission times were a concern because they caused unnecessary anxiety for patients and delayed access to the departments that could provide them the best possible care.

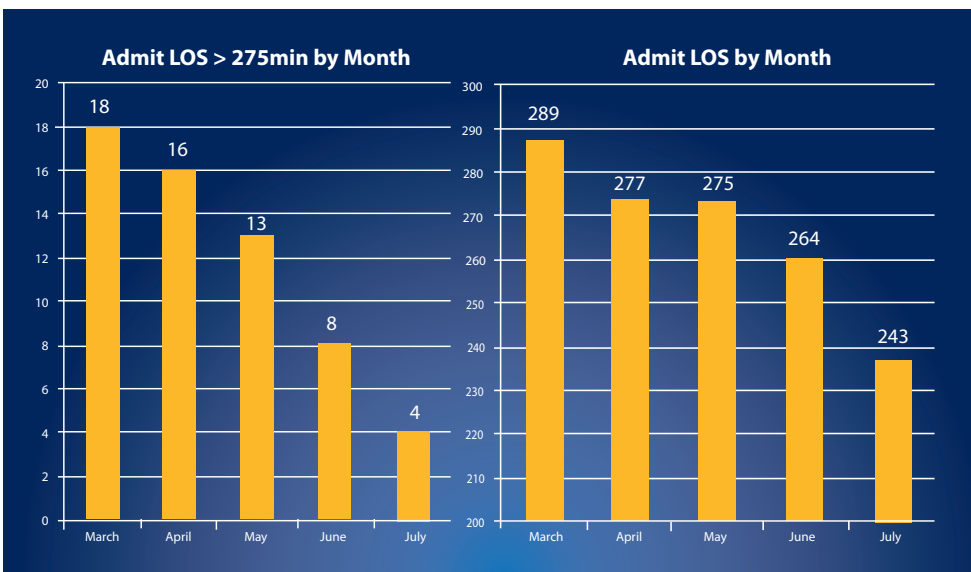
### Preparation

After discussions with hospital administration, nursing leaders, and department directors, the potential for Kaizen to improve the current state seemed opportune. Once the problem was defined and the scope of the Kaizen was specified, all that remained was to select team members and give them a clear target. It was agreed that the team would have participants from a variety of roles in the ED, including nursing, registration, IT and a unit secretary. The chief of emergency medicine volunteered to lead the team and received a Kindle full of lean resources to review before the Kaizen.

### Event

During the Kaizen, observations were illustrated on a value stream map to better visualize the process and identify value adding moments. An average LOS of 289 minutes was validated. The Kaizen team consistently kept lean principals at the forefront, ensuring the team focused on reduction of waste, lead times, cycle times and hand-offs. Examination of the future state value stream map found that 60 minutes could be reduced from the process if certain elements were standardized and choreographed. The Kaizen team was present during the event's entirety, kicking off each morning with the tools and principles to be used, facilitating the decision making processes through guidance and tools and ending each day with a leaders' meeting report-out to administration.

*The facility, which had been routinely tagged for average LOS in the emergency department as "worst in the system" of over 20 hospitals, became regularly posted as "best in the system" after the Kaizen.*



### Results

Patient flow at this facility was tracked along a series of stations for every case. One month after the Kaizen, the average patient wait time for the following stages was reduced:

- "In Bed" to "Physician Greet" from 12 minutes to 6, a 50% reduction
- "Physician Greet" to "Disposition, Admissions" from 242 minutes to 224, a 7% reduction
- "Physician Greet" to "Disposition, Departs" from 137 minutes to 120, a 12% reduction
- Overall Average Length of Stay from 289 minutes to 243, a 16% reduction

Initial improvements shown above have been sustained for over a year. The facility, which had been routinely tagged for average LOS in the emergency department as "worst in the system" of over 20 hospitals, became regularly posted as "best in the system" after the Kaizen.

The team continues to strive for 73 minutes LOS as an achievable representation of perfection within current conditions.

# CASE STUDY #3

## Anesthesia Department

### Background

A mid-sized anesthesia group in South Florida suffered from a high cancellation rate. Nineteen percent of scheduled cases were cancelled within 24 hours of surgical start time. Further, gaps existed in the flow of information, daily case volume varied widely and the process for completing daily work stressed and strained staff members.

### Preparation

After discussions with hospital administration, nursing leaders and department directors, the facility leadership agreed to try Kaizen to improve the current state. Once the problem was defined and the scope of the Kaizen was specified, all that remained was to select team members and give them a clear target. It was agreed that the team would have participants from a variety of roles in the surgical and anesthesia units, including nursing, registration, IT and a unit secretary. The chief of anesthesia volunteered to lead the transformation through the Kaizen, joined by the hospital's COO as a co-leader.

### Event

Continuous support from the Kaizen team facilitated the proactive actions of the team from start to finish. A detailed agenda was laid-out for team members showing, moment by moment, the format that would be followed to properly move the department towards its goals. Direct observations of time, space, quality, safety and information flows were conducted. This was accompanied by interviews and root cause analysis. The issues were sorted so that ideas could be individually formulated to address the most fruitful opportunities. These included the general clutter of charts, the possibility of collecting information farther upstream and the reduction of charting errors. With judgments suspended, team members could

share their suggestions and build a constructive dialogue, feeding off each other's reasoning. The most promising solutions were implemented with visual dimensions capable of triggering actions and simultaneously providing feedback on process performance. Improvements included specified positions for each patient chart, in keeping with its stage of PAT (pre admission testing), in order to support organization and visual management. Requiring insurance verification at an earlier interval was found to increase quality, reduce cancellations and free-up time closer to the day of surgery; 72 hour pre-op requirements were also attached to the existing booking sheet for a similar purpose, all of which now receive quality checks innate within the process.

### Results

Three weeks after the Kaizen event, the department averaged chart completion of five days before surgery, an improvement from two days. The team continues to strive for seven days advance completion. The cancellation rate within 24 hours has dropped to 5%, eliminating massive waste and rework. (Note: Cancellation rate should not be targeted at zero, as there is a natural need for cancellation due to patient condition. Studies were presented by the facility showing national average of 5% for naturally needed cancellations.)



### Summary

Kaizen as a lean transformation approach for hospitals proves an effective tool in creating measurable improvements, reducing waste, developing people and enhancing customer satisfaction. Increased quality, timeliness and productivity through reduction in waste are world class deliverables that resonate with hospital leadership on a global level. Any hospital or hospital system seeking to enhance their knowledge, wisdom and skills would benefit from the implementation of a lean transformation strategy.