Reducing Lobby Waiting Times by 60 Percent for Pre-Operative Testing and Admitting

Lean has been recognized as a high effective way of increasing customer satisfaction while delivering financial results for organizations of all types. Visionary healthcare organizations are beginning to embrace the techniques in various areas of healthcare delivery to improve patient satisfaction, decrease processing times, utilize staff more efficiently and vastly improve patient safety. In addition, Lean is used in revenue cycle operations to improve charge to cash conversion ratios and to reduce cycle times. This case study outlines the application of Lean to Pre-Operative Testing and Admitting, a unique application where patient satisfaction, clinical delivery and financial performance are improved simultaneously.

Extreme Makeover Events are the most powerful mechanism to deliver tangible and sustainable change in healthcare today. A typical event lasts 5 days during which an area is assessed, key issues are identified, a new process is designed to Lean principles and the new process is implemented. The event is staffed by a team of 8—12 process owners who are trained on day one of the event and subsequently guided through the extreme makeover event by our experts.
The deliverable of this process is tangible change in the form of robust, efficient and patient focused processes.

As part of the efforts to continue to exceed its already outstanding reputation, the leadership team of a 400+ bed premier healthcare provider organization recognized an opportunity in the same-day-procedure admitting and pre-operative testing area. Patients presenting for admitting and pre-operative testing at the hospital experienced a scenario common in many hospitals across the United States. Patients were initially greeted and asked to wait in the lobby until being called for admission. Once called they were escorted to an office, admitted, and then subsequently asked to wait in another lobby. Patients were then called by the nurse conducting the clinical assessment in another office. After the nursing assessment was complete, patients were asked to wait again in the lobby area until called to have lab test samples drawn and other tests performed. In addition to lengthy process times, the average initial lobby wait time was 41 minutes. To make matters worse, the average of the 5 longest wait times per day averaged 1 hour and 40 minutes, demonstrating that many patients endured excessive waiting times.

The executive leadership team, recognizing the negative patient satisfaction impact of extensive waiting and processing times, decided to sponsor an Extreme Makeover Event to address the issue involving the process owners using the guidance of Lean / Toyota Production System experts.

As a first step, a multifunctional team with associates representing admitting, nursing, IT and the leadership team was formed. The team was to address the issue of extensive wait times and excessive patient movement over the course of a six-day event, by applying the principles of Toyota Production Systems.

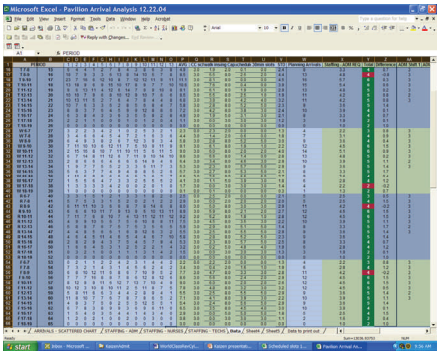
A time frame was selected for the event, and given the nature of pre-op testing, it was decided to carry out the event from Thursday to Wednesday of the designated week. This arrangement allowed for all physical change of the area to occur over the weekend with no patient impact. The goal was set, that on Monday morning, at 6 am, the area had to be fully operational and ready to receive patients, fully utilizing the new process.

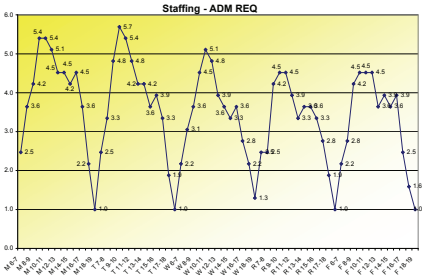
Getting Started
As with many activities, taking the first step is the most difficult. To get started assemble your leadership team and identify 2-3 areas that must be improved, for patient satisfaction, staffing, financial or other reasons. Clarify what outputs and results need improvement. Once you have identified the areas of interest, we will be on site with you to select the best area for the first event, retrieve and analyze the initial data and prepare your staff for the event.

Thursday morning the team started in the classroom by learning the basic tools and techniques of Lean and Toyota Production System. While the concepts were new to most associates, they were received enthusiastically: a process and method

A Sample of Typical Lean Tools Taught and Used in an Extreme Makeover Event:

- Philosophy of Lean
- One Box
- Metrics Design
- 7 Types of Waste
- Process Mapping and Spaghetti Charts
- Value Stream Mapping
- Cell Layout
- Standardization
- Standard work
- Arrival Modeling
- TAKT time
- Standard Work in Process
- Detailed Staff Modeling
- Work Management Models
- Visual Workplace





Detailed staffing models developed during the event

What is Lean / Toyota Production System?

The philosophy of Lean, put simply, is a relentless organizational focus on eliminating any non-value added consumption of resources. The methodology originates in the automotive industry with Toyota Motor Company, which is still recognized as the leading manufacturing organization world wide that has embraced Lean as a strategy. Our projects demonstrate that there are many lessons that can be learned by studying these methods and applying them to the healthcare environment.

had been found that allowed associates to develop and implement ideas that they had thought about for a long time. In addition to implementing those ideas, new tools allowed the creation and implementation of additional, less traditional solutions. Thursday afternoon was dedicated to observation, an effective and underutilized way to assess a process from the outside looking in. Many traditional 'improvement solutions' are generated in conference rooms without observation of the actual process. Each individual has a personal and departmental bias in identifying the problems, and only observation using tools such as process mapping, spaghetti charts, the 7 types of waste filters, etc. allow for the true issues to be identified. The consensus after only a few hours of structured observation and tool usage was unanimous: "I don't believe we really do it this way. We can do so much better".

In parallel to the observations, a small team retrieved thousands of patient encounter records from the information system to conduct detailed analysis of the situation using statistical methods originating in the areas of operations research and six sigma. The next step on the road to improvement entailed consolidating all the information, from observations and analysis, and to derive a list of key challenges and opportunities that needed to be considered in the process design phase of the project.

By Friday afternoon the entire team returned to a quick educational module delivered by the facilitators to learn a rigorous method of designing healthcare processes to drive patient satisfaction using Lean principles. By Friday night the design efforts had been completed and included elements such as dedicated patient rooms which were equipped to admit patients and perform all clinical assessments without moving the patient , vastly improved patient and staff flow, clear roles and responsibilities, a work management model utilizing visual workplace principles, performance measurement for the entire department, and countless other features.

Saturday morning, with no patients due to arrive until Monday, it was time to begin the physical transformation. Associates that had not been on the initial team arrived (even some from other departments), to volunteer their time to help build the new process. Word of the extreme makeover had spread throughout the hospital with many eager to help out and be part of the new way of improving the way things were being done.

All existing offices were emptied out into the lobby. IT infrastructure in the form of network drops were installed in all rooms. Computers were moved and re-assembled. Workstations were put together by admitting and nursing staff. A prototype patient room was laid out, put into place, tested and revised several times until an efficient and standard layout was found that could be implemented in each room. The central control board using visual workplace principles was designed and the method of managing the work was taught to all associates. A reception area was put into place and a process for preparing all charts in advance was designed. Technicians were trained to assemble the visual triggers based on orders and hospital policy. In parallel to the physical activity to implement the new process, a smaller team completed a detailed patient arrival study, that

How are Extreme Makeover Events different from traditional consulting?
Extreme makeovers leverage the knowledge of your associates, the intricacies of your hospital and culture with the process assessment and Lean design expertise of our associates. Instead of delivering reports, which rarely get implemented, we deliver actual change. Since associates are fully involved in the assessment, design and implementation, the solution is not merely 'bought into' but rather owned by your associates. Extreme makeovers not only improve processes, they improve teamwork, morale and the skill set in the organization. It is this unique combination of internal resources and external structure, tools and guidance that delivers truly remarkable results.

Example of visual workplace principles as part of work management in clinical settings.

in conjunction with the detailed time studies performed on Friday, was used to derive a new staffing model.

On Sunday morning doubt set in. Could all the work really be completed by Monday morning? Would there be enough time to conduct trial runs with associates volunteering as 'patients'. Would the IT infrastructure really be in place? Could the lobby be presentable?

Sunday night the teams efforts became visible, with the area nearing completion and trial runs being conducted. The area was opened to receive patients as planned on Monday morning at 6 AM with overwhelmingly positive feedback from patients that had experienced the process prior to the change. Not only were the waiting times reduced, there was a visible patient focus, with processing and waiting times being taken for all patients, a comfortable environment with minimal movement for patients, and a team, having been formed through the process of the extreme makeover, executing the process to maximize patient satisfaction by helping each other deliver an exceptional patient experience.

The results of the effort have been remarkable not only from a qualitative viewpoint, but from a quantitative viewpoint as well:

- Average waiting time in the lobby is now 15 minutes, which represents an improvement of 60% compared to the 41 minute pre-event waiting time
- The daily average of the 5 longest waiting times is 47 minutes reduced from 1 hour and 40 minutes prior to the event
- The average total processing time has dropped to 1 hour and 15 minutes, a 26% improvement compared to pre-event numbers
- Time of Service Collections have increased by 40% reducing the annual bad debt by over $220,000

Extreme makeover events using Lean and Toyota Production Systems have proven to be one of the most effective ways to change processes in healthcare. In addition to changing processes, Extreme Makeover Events generate ownership of new processes by associates, since the associates design and implement the solution under the guidance and supervision of seasoned Lean experts. Other areas that have achieved similar results are: Emergency Departments, HIM Departments, Business Offices, Bed Management, and other Admitting areas.

The mission of **Healthcare Excellence Institute** is to help organizations create safe and efficient healthcare delivery processes by adopting proven world class strategies such as Six Sigma, Lean / Toyota Production System to the complexities of healthcare.

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