

Lean Healthcare Program

Lean Healthcare Goal

The goal of the Lean Healthcare Program is to improve your bottom line and customer/patient satisfaction by increasing responsiveness to the customer/patient, while at the same time, reducing cost and increasing quality. We have developed very effective simultaneous training and application techniques that adapt Lean tools and concepts to each organization's unique situation.

Lean Healthcare Benefits

Some of the benefits of Lean Healthcare include immediate ROI, increased patient satisfaction, faster response to patient needs, staff are able to spend more time on value activities, the impact of the change is transferred to groups instead of individuals; the participants in the program gain the confidence to continue without outside assistance. The entire organization 'sees' the impact and will understand the value in supporting the new direction and thinking.

Lean Healthcare is simply about creating more value for customers/patients by eliminating activities that are considered waste. Any activity or process that consumes resources, adds cost or time without creating value becomes the target for elimination. Lean focuses on the client/patient and what the client/patient feels is 'value'.

Lean Healthcare Approach

Our Lean Healthcare approach focuses on 'system-level' improvements (as opposed to 'point improvements'). It is this system-level work that dramatically improves your bottom line results. In order for a process to reach its full potential, it is important to initially understand what is happening from a system perspective (end-to-end). The next step is to transform the selected value stream(s) - from request of the service to the actual delivery of that service.

Before the Lean Healthcare Program begins, the organization selects 1 to 2 value stream(s) for the Lean transformation. These value stream(s) will be analyzed, and the activities will be assessed and data captured to determine value and non-value (waste). The current state map will show true customer/patient wait time measured against client/patient demand. A future state value stream map will be created that looks out both long term (couple years) and short term (3 to 4 months) at what the system would look like with the non-value add activities, or waste removed. From the future state map the team creates a Lean implementation plan that systematically details how the waste is going to be eliminated.

The detailed Lean implementation plan identifies the tools required, where they are required, when they are required and who is responsible for applying these tools to make the transformation from current to future state. The Lean implementation plan eliminates the opportunity for creating point improvements and avoids "exciting chaos" and ensures everyone is moving in the same direction (vision). This element of executing a proper Plan is critical to maximize results and sustain the improvements.

Lean Healthcare Solutions

Reduce Operating Costs

Operating costs are something else that can be dramatically affected by eliminating many of the different types of wastes that currently exist in our healthcare system.

Inventory

For instance, many healthcare products are controlled by lot numbers and expiry dates but since staff are already very busy, inventory management is often done by estimating requirements and leads to excessive inventory that expires before it is needed. The additional orders require extra space to store this excess inventory. Or, new stock is just dumped on top of old items to fill a bin which causes the older items on the bottom to not get used and then the older supplies end up being scrapped or written off. This over stocking creates financial pressures/cost but also increases the risk of using an expired product.

By designing a simple First In, First Out (FIFO) system that operates with a Just In Time philosophy, you will be able to:

- » Save dollars on the inventory
- » Re-allocate the expensive hospital real estate being used by excessive inventory
 - » Eliminate cost for off site storage
 - » Reduce the amount of time and effort required to manage inventory
 - » Eliminate or reduce the opportunity for dispensing expired product
 - » Reduce the scrap cost caused by damage and replacement by improved products

Standardization

Another example of how Lean can decrease operating costs is by working with standardized processes. A standardized system provides consistency in the process so errors are not only decreased but are difficult to make. Also, a well designed standardized system/process allows for error trapping and easier identification of the root cause of errors.

Healthcare grade materials are very expensive and having to rework defects increases costs by the amount of these expensive materials wasted and the wasted time and effort of staff. Rework is expensive and it increases staff frustration levels which decrease morale and productivity. This type of environment leads to more errors and more frustration for both the client and staff. We need to get out of this vicious circle.

As you go through your processes and systematically eliminate wastes, you will see that the biggest waste of all has been of your number one asset - your people and their talents. The amount of time staff spend reworking, waiting, excessively walking or completing other unnecessary, but currently required, tasks is frustrating to everyone involved. Once the non-value activities are reduced or eliminated, then the staff will regain their sense of pride and satisfaction with the end result being better, less costly service to the client.

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Error Proofing

According to a 2005 World Health Organization Report on Patient Safety, they revealed that 4% of patients suffer some kind of harm in hospital; 70% of the adverse events result in short-lived disability, and 14% of the incidents lead to death. A report from The Institute of Medicine (IOM) estimated that "medical errors" cause between 44,000 and 98,000 deaths annually in hospitals in the USA. The UK Department of Health, in its 2000 report, estimated that adverse events occur in approx. 10% of hospital admissions or about 850,000 adverse events a year.

Adverse events exact a high toll in financial loss as well. In the UK consequent additional hospital stays alone cost about £2000 million a year, and paid litigation claims cost the National Health Service around £400 million annually, in addition to an estimated potential liability of £2400 million for existing and expected claims. The total national cost of preventable adverse medical events in the USA, including lost income, disability and medical expenses, is estimated at between US\$17,000 million and US\$29,000 million annually. Added to these costs is the erosion of trust, confidence and satisfaction among the public and health-care providers.

Since errors in healthcare can be the difference between life and death, the more we can do to prevent them the better. Errors also impact financial costs and increase the stress levels of staff. With these major concerns, it is critical to design and continually strive for an error-proof process. In an industry where human life is at stake 99% quality should never be good enough. In some other environments where the well being of humans is not at stake, 99% would be OK. Could you imagine if only 99% of the worlds bridges were stable, if our cars only started 99/100 times or our telephones only connected 99% of our calls? The result would be collapsed bridges, stranded motorists and many missed conversations.

The ultimate goal in error-proofing is to design a system that will detect and prevent errors from happening. Visual inspection is a possible method of removing errors but it is only 80-90% effective. For instance, how many people go straight through intersections without ever seeing the stop sign? There are many examples of error-proofing in our everyday life. Some examples are the overflow drain on sinks, auto shut off on small appliances and alarms for seat belts on cars. An example of a preventative "Poka Yoke" is that your car will not allow you to remove the keys unless the gear shift is in the park position. This prevents the car from being able to move while unattended.

While redesigning and standardizing our processes it is very important that we are mindful of any step where an error can happen and we design the best possible Poka Yoke to prevent it from being able to happen. Inspection isn't reliable enough to risk human life. We must integrate strategies to prevent and detect errors before the process is complete.

Every process has variation and most processes are very complex. Our challenge is to remove the variation so that all processes are predictable and consistent. The ultimate goal, as stated above, is to design the processes to ensure errors won't happen. In most cases, to eliminate or prevent errors, we must develop processes where humans and equipment, because of the error-proofing mechanisms put in the system, are not able to make mistakes and variation is restricted.

Effective error-proofing is able to detect and prevent errors reliably and consistently without being affected by emotion or distractions. It does not normally replace the need for human intervention, but it does assist in bringing the concern/problem to the attention of the staff before the problem can interfere with the next step in the process

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Improve Productivity

Most employees come to work wanting to do a good job. Most employees also think they are working hard and are doing a good job. The fact is they are working hard but that does not mean that they are working smart or working on value activities.

All processes within any organization are made up of value and non-value activities. The interesting fact is that most of the activities that staff must complete are non-value. It isn't that the staff are not performing properly or trying to do non-value work, it is that the process is designed with non-value activities and they have no option but to follow the process as set out. Therefore it is not the people - it is the 'system' that drives people to do non-value activities.

In this time of a) increasing demand on our healthcare system, b) lack of qualified staff and c) no increase in funding, it is imperative that we take care of the staff we have, help decrease workplace fatigue and stress while increasing productivity and pride in their work. This challenge seems unattainable but by adapting, applying and implementing Lean properly, you can reach these goals and even surpass them.

Lean is all about doing more with less while improving quality, client satisfaction, costs and speed of reaction to client needs. Lean when applied culturally and technically will allow any organization in Healthcare to provide better service to patients without increasing costs, space or adding any capital equipment. With Lean, your entire group understands what is value and non-value from the perspective of the client and they know exactly how to remove the non-value activities properly to create a Future State which is truly value. Once the non-value activities are removed or reduced, then the staff can do more of what they were professionally trained to do - to treat and assist patients. The additional improvements are reduced stress levels of staff plus groups working together on a vision of a Future State (team support and pride of accomplishments).

For example - when you standardize a process and eliminate the waste from that process, it makes the process quicker, predictable and the entire process is less chaotic. Instead of the "Hurry Up and Wait" cycle of batching that happens currently, the continuous flow creates a calmer atmosphere in the workplace.

Now your staff can become more productive without working harder - they are doing only value added work and not wasting their time on non-value.

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Improve Patient Turn Around Time

Whether it be in Diagnostic Imaging, Pharmacy, Clinical Laboratories, Medical Records or Admitting, decreases in Turn Around Time (TAT) can only have positive effects for patients in our healthcare system and for the healthcare professionals waiting for the information and/or the results.

Using Lean to develop a detailed Future State Implementation Plan will allow you to determine what tools you need to remove waste in the 'system' and the sequence the tools should be applied to in order to be effective. Lean Tools such as 5S, Standardized Work, Visual Controls, Flow, Quick Changeover and Poka Yoke/Mistake Proofing may be utilized to successfully reach the Future State and ultimately dramatically reduce the TATs.

This improvement results in the patient/all healthcare staff getting the necessary critical information needed to care for their patient in a more timely fashion allowing the patient to get the care they require sooner. The other benefits are:

- » A potential decrease in complications if the information is quicker and the wait time for treatment is less
- » It would potentially free up resources for other patients i.e. a room or a piece of equipment, to be accessible for another patient sooner

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Improve Patient Wait Times

As our population ages and baby boomers start requiring higher levels of care there is beginning to be a dramatic increased demand taxing our already struggling healthcare system. Without additional financial resources, space or availability of qualified staff, it is imperative that we work smarter to accommodate this increased workload and protect our staff from burnout.

One area which has become front and centre in healthcare issues recently is patient wait times. Not only is there the life threatening risk of complications by having a delay in receiving care much increased but also, patients situations and status may change by the time care is available making what is now available no longer the appropriate option or something needing to be redone. This initiates a domino effect and will in turn cause the next patient to have a longer wait time as well.

By mapping and evaluating the processes that are involved you will be able to identify and eliminate the waste that causes the excessive waiting. Collecting metrics will give you a baseline and let you identify where the problems in your processes really are and measure impact of changes. There are Lean tools which will help address these issues. By using standard work and visual aids in room changeover, whether it be in the OR, ER or any other patient care area rooms will be ready for the next waiting patient much quicker. Using 5S will allow staff to spend less time searching for items required to provide care and more time caring for their patient.

Using Lean in Diagnostics will allow decreased Turn Around Time (TAT) for these areas which in turn will not only allow patients to receive response to their results in a more timely fashion but will also allow them to move to the next part of their treatment opening up a bed for the next patient. By focusing the new design of the processes around the top 80% of its requirements and systematically eliminating waste you will be able to make a dramatic effect on patient wait times.

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Preventing Errors

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Quick Setup and Changeover

Often when you walk down the hall in a hospital you see rooms without patients but on the news you are hearing about bed shortages and long waiting times for patients waiting for an inpatient bed. These rooms, whether they be in the ER, the OR or on any ward, are usually waiting to be cleaned and restocked. By first observing and then doing a detailed analysis of your current 'setup - changeover' process you can design a new standardized system that will not only decrease the amount of time taken but will also ensure that rooms have been properly set up according to what you need, and where and when you need it. This is completed by using 'Quick Changeover' tools, 'Visual Management' techniques, Error-Proofing, 5S and overall eliminating waste in the end-to-end system.

A standardized setup and changeover process will clearly define who is responsible for what tasks, what tools are required and where they should be located, what order tasks need to be done in, how they are done and how to notify others when they are required or the process is complete. Also, by staggering the transfer or discharge of these patients throughout the day, when possible, instead of everyone leaving or moving in the morning, staff will be better able to respond to continuous flow of work instead of a large, often unmanageable batch.

Once this new process has been implemented and the staff become familiar with their roles, the rooms should be out of service for a much shorter time. This shorter time should eliminate the need to have an alternate process for stat requests and get a new patient into the room much quicker. This will also affect patient wait times.