



Lean Six Sigma for Healthcare – Not If but When

Manufacturing has long used Lean and Six Sigma tools to continuously improve in their global marketplace, and now service sector companies see the value of these tools to meet their challenges. The healthcare sector is seeing early signs of Lean Six Sigma deployment, and I expect this sector will find the greatest benefit from the use of these tools in the future. Healthcare can make money and save lives at the same time, and payoffs can't get much better than that. Healthcare is a process intensive business rife with data and populated with people who care. That seems to be the perfect setting for Lean Six Sigma success. Today there is both resistance within, and tremendous public pressure on the healthcare sector to improve – it is not a question of if they have to improve but when they will improve with use of tools like Lean Six Sigma tools that will give them the results needed to sustain them.

Lean is already used effectively in many healthcare organizations. Lean thinking focuses on driving out waste so that all work adds value and serves the customer's needs. Identifying the value-added and non-value-added steps in every process is the beginning of the lean journey. Virginia Mason Medical Center in Seattle has been using Lean management principles since 2002. By working to eliminate waste, Virginia Mason created more capacity in existing programs and practices so that planned expansions were scrapped, saving significant capital expenses: \$1 million for an additional hyperbaric chamber that was no longer needed; \$1 to \$3 million for endoscopy suites that no longer needed to be relocated; \$6 million for new surgery suites that were no longer necessary.

Despite a "no-layoff policy," a key tenet of lean management, staffing trends at Virginia Mason show a decrease in 2003 and 2004, after 6 successive annual increases. Using lean principles, staff, providers, and patients have continuously improved or redesigned processes to eliminate waste, requiring fewer staff members and less rework, resulting in better quality. As attrition occurs, improved productivity allows for them not to be replaced.

Lean delivers improvement quickly, and those healthcare providers using the approach appreciate that improvement. Lean often uses the Japanese Kaizen approach to achieve change, which involves an intensive review of work processes with staff pulled onto a team for a week to learn lean tools and map existing and improved future processes. The improved future process is implemented the next week and savings begin to occur within a month's time. Many processes are simplistic enough to use lean techniques to achieve speedy solutions – others are more complex and take another approach.

Six Sigma techniques are used to tackle more complex problems where more in-depth analysis is required to solve a problem for the last time. Six Sigma tools focus on variation and defects, and set a goal to bring processes and results under control to improve quality. When Lean and Six Sigma are used together, the first phase of a project becomes the define phase when you determine which set of

tools will be required to solve the problem. As your team works with an expert to define the problem and take initial readings of process capability, it is fairly easy to determine if a lean solution will solve the problem, or if the problem is so complex that a full Six Sigma project (which includes Define, Measure, Analyze, Improve, and Control phases) is the more effective way to address the problem. Six Sigma is the process used by Motorola and General Electric to achieve world-class quality and leadership in their industries, and healthcare may have many complex processes that would require Six Sigma tools to achieve improvements.

Why are so many healthcare organizations reluctant to embrace Six Sigma? Why do so many others that try Six Sigma struggle with it? We suspect there are several challenges:

- The first challenge is people. People in healthcare organizations tend to be people who want to interact with and care for other people. That's a great quality to possess, but it's not necessarily one that creates excitement around improving processes or around thinking in systems terms. People in healthcare have not been challenged to continuously improve. Today the pressure to improve is there, but the experience most often isn't.
- Ironically most people feel that physicians are the most resistant to Six Sigma techniques, but physicians in fact have the right mindset - the healthcare business people really need to think more like doctors (learn to identify what's wrong, diagnose the problem and determine the best course of action to achieve the solution.)
- The second challenge is organizations. At the bottom, everyone is busy. The nurses, technicians, and others are fully engaged in their jobs 8 to 12 hours a day. Hospitals generally are not organized to support carving time out of the day to support individual participation on process improvement teams. At the top, there is another problem. Most hospital boards that are non-profit have no economic incentive to drive costs down, and most are questionably large with 20-30 members. With that many people steering the ship, decisions get bogged down and strategy execution becomes dysfunctional.
- A unique challenge in hospitals is data. There is plenty of administrative data in hospitals, but on the clinical side each patient is different. When you address problems as processes (methods of delivering care) instead of unique products (patients), the difference between patients is another variation factor in the process. There's no better way to address variation challenges than with Six Sigma.

Those healthcare organizations that have utilized Lean and Six Sigma to improve are beginning to tell their success story, and regulators and employers (those stuck with the tab for healthcare's current poor performance) are listening intently. Those that are early adopters (Mayo, Cleveland Clinic, Virginia Mason, and ThedaCare here in Wisconsin) are being praised for their initiative. With comparative data now more public, it is easy to see that those adopters are out-performing other healthcare providers. It is no longer a question of if, but when improvement with tools like Lean and Six Sigma techniques becomes more widespread in healthcare so that more benefit from continuous improvement.