College of Business book review by Jon H. Marvel

Title: "Lean Six Sigma for Hospitals: Simple Steps to Fast, Affordable, and Flawless Healthcare"

Author: Jay Arthur

Publisher: McGraw-Hill Professional

Length: 368 pages

Price: $40.00 (softcover)

Reading time: 6 - 8 hours

Reading rating: 8 (1 = very difficult; 10 = very easy)

Overall rating: 3 (1 = average; 4 = outstanding)

If you work in the healthcare industry are looking for proven methods to improve your workflow processes, then Jay Arthur’s book titled "Lean Six Sigma for Hospitals: Simple Steps to Fast, Affordable, and Flawless Healthcare" provides a framework for analyzing and improving your processes. In his book, the author addresses one of the major challenges for healthcare in the twenty-first century; healthcare processes will require major improvements in quality, speed and cost to provide true reform for the healthcare industry. The author demonstrates how lean six sigma tools, which have garnered most of their attention for improvements achieved in manufacturing industries, can be and have been effectively utilized in the healthcare industry.

The National Coalition on Healthcare estimates current annual healthcare costs in America exceed $2.5 trillion and will exceed $3.1 trillion by 2012. Waste and rework in businesses, including healthcare, range from 25 to 40 percent of the total. Hospitals, which represent one-third of these healthcare costs, are required to deliver in excess of $100 billion in savings mandated by the healthcare reform bill. Hospitals such as Virginia Mason, Cleveland Clinic and others have used Lean and Six Sigma to improve their healthcare delivery systems. A common factor impacting hospitals’ ability to improve their processes relate to their ability to streamline patient flow. A 2009 industry study established the average patient turnaround in an emergency department exceeded four hours. A New Jersey hospital, winner of the 2004 Baldridge Award, through application of lean and six sigma tools, was able to reduce the turnaround times to 38 and 90 minutes for discharged and admitted patients respectively.

The author makes the case that Six Sigma training introduces a large set of improvement tools, including design of experiments, which is rarely used in healthcare, but training and applying just five improvement tools provides a significant impact in process improvement. These five tools are: XmR control charts to show performance over time; Pareto charts to identify improvement opportunities; Histograms to analyze deviations from target; Ishikawa or fishbone diagrams to show cause-effects and Value stream maps to identify delays between process steps. The book includes temporary use of a Microsoft Excel add-in as well as tutorials on the use of the software to apply these tools. The Lean Six Sigma methodology focus on what are considered the three big leaks in business processes: delays, defects, and deviations. These are the main costs of poor quality regardless of whether you are operating as manufacturing or a healthcare organization. A modification of the Pareto principle, otherwise known as the 80/20 rule, is the 4-50 rule. The 4-50 rule states that 4 percent of any business process, one step out of 25, causes over 50 percent of the waste, rework, defects and deviation. The application of Lean Six Sigma tools on hospital operations has the potential to reduce deaths per hospital admission to 3.4 per million from the current estimate of 1 in 300 as reported in 1999.

Many of the Lean Six Sigma tools described are graphical in nature and are easily interpreted. There are advanced tools that are more analytical and can be used compare the before and after performance of a process to determine if the results are statistically significant. The tools typically fall into a category known as hypothesis testing and a chapter in the book is dedicated to explaining the use of these tools and providing examples. The author concludes his book by identifying some of the common pitfalls in Lean Six Sigma implementation and provides guidance on how improve the probability of a successful implementation.

Jon H. Marvel is an Associate Professor of Global Management and Strategy in the College of Business at Western Carolina University. For previously reviewed books, visit our Web site at www.wcu.edu/cob/.