

Applying the Principles of Lean Management to the Radiology Department

Demet Bayraktar

Business Administration Department
Faculty of Business and Management Sciences
Suleyman Sah University
Tuzla, Istanbul Turkey
dbayraktar@ssu.edu.tr

Hakan Butuner

Business Administration Department
Faculty of Business and Management Sciences
Suleyman Sah University
Tuzla, Istanbul Turkey
hakan.butuner@imeco-tr.com

Gözde Hatipoğlu

Business Administration Department
Faculty of Business and Management Sciences
Suleyman Sah University
Tuzla, Istanbul Turkey
gozdehatipoglu@gmail.com

Abstract

Lean principles have recently come along with an emerging approach in healthcare systems for increasing the quality of care, reducing costs, and decreasing cycle time as well.

The aim of this study is to implement lean principles to the radiology department in one of the leading private hospital facilitating in İstanbul, Turkey. For this purpose, the project team constituted from patients' right and quality councils has determined three main key performance indicators as cost, service quality, and cycle time in order to determine the efficiency improvement in the radiology department and also in the hospital within the multiplier effect.

A value stream map of the current state of radiology department has been formed through the use of information and data from field studies and measurements. Root cause analysis and PDCA method in the context of continuous improvement studies have been performed in order to eliminate wastes and improve efficiency. Accordingly, five main improvements have been realized in the hospital starting with the radiology department, expanding to the other departments. Correspondingly, the workflow was decreased to 7 steps, eliminating 7 non value added activities. Additionally, dramatic savings in printing costs, improvements in cycle time, and increasing in service quality have been realized.

Keywords

Lean hospitals, lean thinking, lean management, continuous improvement, healthcare

Biography

Dr. Demet Bayraktar is a Professor and Chair of Business Administration Department at Suleyman Sah University, Istanbul, Turkey. She received a B.S. in Chemical Engineering, a M.Sc. in Management Engineering, and a Ph.D. in Management Engineering from Istanbul Technical University. She worked as research assistant (1987-1996), assistant professor (1996-1999), associate professor (1999-2005), and professor (2005-2013) at the Management Engineering Department of Faculty of Management in Istanbul Technical University. Her research interests are in the areas of mathematical modeling, optimization, decision support systems, and meta-heuristics in manufacturing, service, and supply chain systems. She has got more than twenty articles published in national and international journals, more than fifty papers presented/published in national and international conferences. She teaches operations research, operations management, decision making at undergraduate and graduate programs. Five Ph. D. thesis, thirty MSc./MA thesis and more than twenty five graduation project have been completed under her supervision in ITU. She is a board member of international and national journals and also scientific council member of some national and international conferences in the area of her expertise.

Dr. Hakan Bütüner is a graduate of TED Ankara College. He received his B.Sc. in Industrial Engineering from Middle East Technical and MBA from Bilkent Universities; and Ph.D. in Engineering Management from the University of Missouri-Rolla. Dr. Bütüner has been active both in academic and professional lives for several years as a planning and programming manager and as a project manager in overseas, and started up and acted as a chairman of a new venture for bringing different and strong international franchising concepts to Turkey. Later he worked as a strategic planning and business development director of Bayındır Holding; as a SPEED (operations & profit improvement program) country manager of Siemens Business Services; and then as a general coordinator of Bell Holding. During the same periods, he was also lecturing in the Business Schools and/or Industrial Engineering Departments of Bilkent, Bosphorus, Bahcesehir and Yeditepe Universities. Dr. Bütüner, currently, is acting as the affiliates of several US companies in industrial management and engineering consulting, training and software solutions field. He is also acting as the founder-president of Institute of Industrial Engineers – Turkish professional chapter. During his career path, Dr. Bütüner has participated in several projects both in Turkey and abroad. Additionally, he is the board member of Institute of High Performance Planners in USA. Author has several publications and books, and at the same time honored by the decision sciences society Alpha Iota Delta

Gözde Hatipoğlu is Gözde Hatipoğlu is an MBA student at Suleyman Sah University, Istanbul, Turkey. She was graduated from the Business Administration Department from Anadolu University. She has an extensive experience in the area of production planning and accounting in textile sector. She has been managing of Patient Relations at Fatih University hospital for 2 years. She has been leading the Lean Principle Projects and Researches at the hospital.