

Lean Six Sigma's in Healthcare

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Abstract: Healthcare as we all know is a service operative system, that requires a systematic innovative effort so that it remains competitive, cost-effective and stays updated. This is an article that will give a glimpse regarding the combination of the principles of Lean Thinking and Six Sigma if brought together can produce a systematic effort in the healthcare industry. Reducing the healthcare expenditure, providing the quality care and making the healthcare facilities accessible are the main benefits of this approach.

Keywords: Six Sigma, healthcare

1. Introduction

The increasing cost of medical care across the globe is creating an alarming situation for the people to access the quality healthcare facilities. Although, with the continuous efforts of advancement in healthcare technologies, the various solutions brought the healthcare cost is still out of control. Various operational inefficiencies like administrative, logistical and operational side of healthcare delivery system is also affecting the quality of the healthcare services being delivered.

In solution to this Lean Thinking and Six Sigma are the two innovative approaches that are being currently used in various industries. Lean Thinking is an idea first brought up by Ford Motor Company and was further popularized by the Japanese automobile industry after the World War II. On the other side Six Sigma was founded by Motorola aiming to provide continuous Quality improvement. Both these two ideas have been nurtured through the years and is being used in various industries including the service industry (healthcare).

2. Objective of the study

Coming to the objective of our study we are going to give a focus on the synthesis of lean thinking and Six Sigma in healthcare setting. Lean helps in providing a total system approach but on the other hand it is short on details, organizational structures and most importantly analytical tools for the analysis. Coming to our second point, six Sigma provide us with fewer standard solutions but on the other hand provide a general analytical framework for the problem solving and organizational infrastructure. So according to us an ideal solution to various healthcare problems are the merge of these two approaches. When we provide an integrated framework of Lean Thinking and Six Sigma it provides us with the following elements:

- A structured approach

- Project based deployment
- Organizational competency development
- Organizational anchoring of solutions
- Linking strategy with project selection

3. Contributions made

Lean Six Sigma in healthcare has been applied to improve the quality of services provided in healthcare setting. Lean Six Sigma basically focuses on the problem solving. There are 5 steps being followed to resolve the problems:

- Define
- Measure
- Analyze
- Improve
- Control

For better understanding we are going to explore these steps minutely in detail. Coming to the first step of Define: It is very important because the problem right defined is the problem being half solved. So, we must be very sensitive and focused while identifying the problem and giving a proper attention to it. After that comes the second step of measure: We must measure whether the steps taken to resolve the problem are able to resolve it. Coming to the third step of analyzing the situation we must check whether the steps taken to resolve the problem are enough to bridge the gap between the current scenario of disbalance to the upcoming scenario of resolving the problem. Coming to the fourth step of Improve: We must check whether the solutions which have been taken to resolve the problem are able to improve the current situation or not. Coming to the last step of Control: we must control the improvements to avoid the situation or problem to occur again.

Let's take an example for the better understanding of the Lean Six Sigma:

Project: Addressing Chemotherapy Medication errors

Project Goals:

- Reduce number of chemotherapy errors which is system wide
- To improve the documentation of chemotherapy administration
- To reduce waste in product and time in chemotherapy administration
- Improve patient satisfaction with chemotherapy experience
- Improve bed flow for patients receiving chemotherapy

Project Scoping Finds:

- Error reporting has been increased as project brings visibility to the process
- As we know that there is no standard definition of error. So, the team decided that error can be defined as the defect which occurs in the process.

Anticipated Solutions:

- They decided to develop a standard process for the chemotherapy administration.
- They also developed the guidelines for chemotherapy use.
- They then developed a standard operating procedure to conduct an effective communication between nursing units, physician practices and the pharmaceutical staffs.
- Finally, they developed a data collecting procedure in order to identify and keep a track of the medication errors.

Anticipated Results:

- There can be a possible increase in productivity by improved bed flow and will help to reduce the steps for chemotherapy administration.
- At last it will help to improve quality and patient satisfaction.

4. Methodology used

Our research is based on the observational study. There is no primary data been collected for the same. The entire study is based on the secondary data and the various research paper already published. As we all know that lean six sigma has been a cornerstone methodology for process improvement. Coming to the various points related to it:

Big data and lean: Lean Six Sigma helps in defining various problems and finally helps in providing a systematic method for developing the solutions. So, the big data part of Lean Six Sigma is that it helps in the collection of data and getting the details of every process that is been involved in that data.

Wait times: The various healthcare settings can use this lean data to reduce the waiting time for the doctors and this is the biggest problem that any hospital faces i.e. the turnaround time.

5. Relationship between lean and six sigma's

In today's era the companies are using the combined effect of Lean and Six sigma referred to as Lean Six Sigma (LSS). This combined LSS approach will help to eliminate waste and variation through DMAIC structure which in turn will help in

achieving customer satisfaction with cost efficiency and quality performance. There are some common areas where both the concepts are being used for e.g.- Brainstorming, process mapping, standardization and mistake- proofing. There is a fact that Lean and Six Sigma should not be used parallelly whereas to be used simultaneously.

6. Discussion and conclusion

As we all know as the day progresses the healthcare market share also increases gradually, hence making it essential for the healthcare organization to provide quality healthcare services rendered to their patients. When the healthcare organization will improve the quality of the services being provided then the patient satisfaction level will also get simultaneously improved. This in turn will help the healthcare organization to achieve the highest level of patient retention and loyalty. Hence, to achieve this a hospital must implement the LSS program so that it helps in improving the quality of healthcare services. This is so because the LSS methodology will ensure the success of the healthcare center through the continuous quality improvement in the level of services being delivered. In short, if the LSS program will be implemented in the healthcare organization it will help in making the healthcare services cost-effective, operationally more effective and will process higher quality of healthcare services been rendered.

7. Managerial insights drawn

As we all know that since years going on healthcare organization faces numerous challenges from the longstanding and not resolved issues. For example: Workforce shortages, Rising consumerism, patient expectation, quality services, affordability and many more. So, it is necessary that the healthcare organization should adopt the effective tool like Lean Six Sigma. Failed to provide so will not only become a problematic issue for the healthcare organization to sustain in such a competitive environment but also to provide quality healthcare services to the community.

References

- [1] <https://www.sixsigmadaily.com/combining-lean-six-sigma-big-data-healthcare/>
- [2] Ahmed Selim, Manaf, Noor and Islam Rafikul, "Effects of Lean Six Sigma application in healthcare services: A literature review," *Reviews on environmental health*, vol. 28, no. 4, pp. 189-184, December 2013.