

Implementation of six sigma in clinical laboratory a new Persuasion

Abstract

Quality is simply defined as doing right things for the right people, at the right time and doing them right. Quality is simply for the first time. It is a process which involves patient centered care, safety, effectiveness and efficacy. Achievement and maintainance of quality needs stringent control in clinical laboratory. Lack of quality is a burden to the society that can be measured in lost lives and wasted resources. So the quality measures are urgent attention. For improvement in quality six sigma principle has to be applied in clinical laboratory. Although the cost increases a little bit but the money spent on implementation of six sigma are eventually realized by eliminating rework, reducing errors and increasing patient volume.

Volume 6 Issue 6 - 2018

Menka kapil, Rateesh sreen, GN Gupta

Santokba Durlabhji Memorial Hospital and Research Centre, India

Correspondence: Menka Kapil, Santokba Durlabhji Memorial Hospital and Research Centre, Jaipur, India, Email drmenkapath@yahoo.com**Received:** November 14, 2018 | **Published:** December 26, 2018

Introduction

In health care system quality is an emerging concern. Many problems persist in providing quality in health care which need solution. An error rate as high as 9.36% has been reported in clinical laboratory which is too high.¹ Among health care services laboratory diagnosis are always remain in priority as around 70% of patients treatment decisions are based on clinical laboratory results.² The testing procedure in clinical laboratory is classified as pre analytical, analytical and post analytical phase. Estimated error rates are maximum in pre analytical phase. As Quality is a process which involves patient centered care, safety, effectiveness and efficacy. Quality is simply defined as doing right things for the right people, at the right time and doing them right the first time.³ Achievement and maintainance of quality needs stringent control in clinical laboratory. Lack of quality is a burden to the society that can be measured in lost lives, reduced functioning and wasted resources. So the quality measures needs urgent attention.

The industrial sectors have been far ahead in improving quality as compared to healthcare. Six sigma is a global management strategy introduced to the industrial world in the 1980s. This methodology has been widely implemented in companies such as Motorola, General Electric, Allied Signal and many others, with tremendous success in terms of customer satisfaction and global profitability. To achieve similar benefits in the healthcare field, Six Sigma is currently being introduced in several laboratories around the world. Unlike other quality initiatives borrowed by the health care sector from the industrial sectors like the TQM and CQI, six sigma is different in that the improvement obtained through this approach provides sustained strategic achievements with long-lasting benefits. The six sigma philosophy is based on a reduction of variation in a process, customer oriented and data driven decisions. Clinical laboratories are in continuous search of methods to solve analytical problems and decrease errors to a negligible level. By the emergence of consumer protection acts and legal suits citing medical errors, in the healthcare industry, the need of improving the quality of healthcare services to near zero level has become the need of the hour. Clinical labs remain in a constant effort to increase their work load, decrease error, improve the quality and decrease the cost.

A sigma value indicates the frequency of defects occurring in a process. Therefore, a higher sigma value translates in lower defects

and a lower sigma value means a higher number of defects. A process is cited to be performing at 'world class' levels when it is functioning at levels of six sigma. In other words, a process performing at six sigma level translates into a phenomenal 3.4 Defects per Million (DPM) opportunities, the practical limit to perfection. The present day healthcare services are only functioning at 3sigma. The only healthcare sector that has been close to achieving six sigma performance is Anesthesia, with mortality rates (taken as defects) as low as 5 per million opportunities.

It has been suggested that reaching a rate of 3.4 DPM opportunities is less important than developing a process to evaluate error rates and bring about systematic changes that increase reliability.⁴

Sigma level	Defects per million
1 σ	317, 310
2 σ	45, 500
3 σ	2699
4 σ	63
5 σ	0.573
6 σ	0.002

Conclusion

If six sigma quality initiatives are applied correctly, they provide a high level of quality at reduced costs. They bring with them a reduced cycle time with improved profits and a competitive edge in business. The managements may be wary at first to join the six sigma quality bandwagon, citing the high costs involved in its training and implementation. However, six sigma techniques, if wisely applied and practiced, are well worth every penny spent. With total organizational commitment, the six sigma techniques help achieve overall reduction in costs of the process. The benefits are often more than financial. An organization, which has successfully implemented six sigma techniques, can also boast of time efficient, effective and less chaotic work force that produces a higher degree of client satisfaction. The dollars spent on implementing six sigma are eventually realized by eliminating rework; reducing errors and increasing patient volume.⁵ Thus six sigma concepts provide a platform for major improvements and help to achieve the goal of ultimate quality to deliver error free and timely clinical diagnostic laboratory services.

Acknowledgments

None.

Conflicts of interest

The auhtor declares there is no conflict of interest.

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