

Short Article

Six Sigma: Application for Health Management

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A B S T R A C T

The Six Sigma is an important tool for quality control and management. The application of Six Sigma can be seen in several fields such as engineering, health, environmental and education management. The specific application of Six Sigma in health center is very interesting. In this short paper, the authors specifically briefed on the application of Six Sigma in health management.

Keywords: Six Sigma, Management, Quality, Health

Introduction

The Six Sigma is an important tool for quality control and management. The application of Six Sigma can be seen in several fields such as engineering, health, environmental and education management. The specific application of Six Sigma in health related activity is very interesting. Health engineering deals with health related instrumentation and system. The applied of basic quality management in general engineering to health engineering is possible. Kolus et al. noted that Six Sigma concept could help improve the health engineering manufacturer process.¹ In this editorial, the authors specifically discussed on some important example on applications of Six Sigma in health activities.

Application of Six Sigma in Health Education

The Six Sigma is useful in quality management of the education process. The application in health education is possible. As noted by Al-Shafei et al., quality management by several concepts including to Six Sigma is required in management of high medical education.² In a recent study from Arizona, USA, 45% of pharmacy colleges used Six Sigma as tool for quality management of the curriculum.³

Application of Six Sigma in Pharmaceutical Activity

The pharmaceutical activity is an important health related activity. Dealing with drug production, the quality control process is very important. Six Sigma can serve this purpose.⁴ It can be applied in wholesale and retail scale. In pharmaceutical industry, Six Sigma can help decrease error and cost save in production process. For retail pharmacy, Kumar and Kwong found that "*Six Sigma tools in this discussion are very applicable and quite effective in helping to streamline and integrate the pharmacy process*".⁵ For updated situation, Six Sigma is reported for advantage in minimizing for the home delivery pharmacy service.⁶

Application of Six Sigma in Health Center Operation

Operation of health center requires good quality management. The application of quality management concepts including to Six Sigma in medical center is accepted for its advantage.⁷ The application can be seen in any unit of the medical center. For example, the medical laboratory can get advantage from applied Six Sigma concept. As noted by Westgard and Westgard, "*Six Sigma concepts provide a quality management system (QMS) with many useful tools for managing quality in medical laboratories*".⁸ Westgard and Westgard mentioned that "*Calculation of a sigma-metric provides the best predictor of risk for an analytical examination process, as well as a design parameter for*

selecting the Statistical Quality Control (SQC) procedure necessary to detect medically important errors.⁹ The management of quality by Six Sigma results in decreasing error, especially those errors occur at pre-analytical and analytical phases.⁸⁻¹⁰

Nevertheless, the Six Sigma concept can help improve quality of medical service in ward that can result in a better patient care. For example, the implementation of Six Sigma concept is proven to be useful in reduction of fall rate among hospitalized patients.¹¹ Gittner et al. noted that Six Sigma could help eliminate missed opportunities for prevention services in nursing and medical processes.¹²

Conclusion

The application of Six Sigma in health related activities is confirmed for its advantage. For continuous quality improvement, the practitioner should follow and use the concept in quality management.

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