



REDUCING THE INCIDENCE OF BLOOD CULTURE CONTAMINATION IN AN ACADEMIC MEDICAL CENTRE HOSPITAL, SAUDI ARABIA: APPLICATION OF THE DMCIB MODEL, A CASE STUDY

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purpose:

Blood culture is a common procedure used in clinical settings for the diagnosis of different types of blood infections. Contamination of the culture occurs quite often, resulting in a false positive or negative result. Such results mislead clinicians and microbiologists, and may result in their making a wrong diagnosis. Using statistical methods leads to a better understanding of how to change healthcare systems and ensure continuous and sustained quality improvement in any clinical setting. Statistical methods are used in a newly-designed DMCIB model (Define, Monitor variation, Control variation, and develop Internal thresholds and Benchmarks). The purpose of this study is to apply this model to develop an internal threshold to reduce contamination of blood culture.

Methodology:

A prospective study design was adopted and the study was conducted at King Fahd Hospital of the University (KFHU) in Dammam, Saudi Arabia, during the two-year period, January 2014 – December 2015. The study was conducted through the five phases of the DMCIB model. Appropriate thresholds were developed for KFHU Blood Culture Contamination (BCC) by applying the DMCIB model.

Findings:

BCC was 3.063% during 2014. After implementing DMCIB, BCC was reduced to 1.119%, with a reduction in variation. The implementation of the DMCIB model helped verify the reduction of BCC, and KFHU was able to achieve its best practice by developing a threshold for BCC.

Conclusion:

The new DMCIB model was useful for people improving the quality of work, in reducing BCC, and in developing the best practice for blood culture processing.

Keywords: DMCIB approach, Blood culture contamination, Statistical thinking, internal threshold

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