

# Reduction of average lead time in outpatient service of obstetrics through six sigma methodology

Miguel Ortiz Barrios, Heriberto Felizzola Jiménez

## Abstract

In hospital services, operations efficiency and healthcare quality are two critical factors since both define the financial sustainability of the hospitals as well as patient health, safety and satisfaction. For this reason, it is necessary to explore different strategies for the improvement of quality and efficiency indicators in the provision of healthcare services. Specifically, this paper focuses on the application of Six Sigma methodology as an important option to solve this problematic. This methodology begins with the identification of improving opportunities that are aligned with the organization goals. Then, a portfolio of potential improvement projects is created. Later, these projects are prioritized with basis on multicriteria decision making techniques, with the purpose of choosing the project with the highest impact on the organization quality and efficiency. Finally, the selected project is developed through DMAIC cycle. An application case related to the process of obstetric outpatient in a maternal-child hospital located in the city of Barranquilla (Colombia) is presented to prove the validity of the proposed approach. The results show that the average lead time in the obstetric outpatient service in which pregnant women are monitored, was reduced from about 7 days/appointment to approximately 4 days/appointment.

## Keywords

Average lead time, Six sigma, Obstetric outpatient, Healthcare quality