

# Implementation of Lean Techniques towards Improving Service Quality in a Public Healthcare using Arena Simulation

## Abstract

The purpose of this research is to simulate the process flow of public healthcare and evaluate the improvement of process flow using ARENA simulation. Lean is a method for process improvement and it can be applied to any process including healthcare sector. The previous study has integrated lean methodology for improving the patient flow by identifying root causes of patient flow problems and proposing a lean patient flow process. Therefore, this study attempts to measure the operation process flow in public healthcare and create an improvement operation process flow simulation model in order to improve the service quality. This study employed qualitative research method and the data collection method was used to observe and face to face interview method. Data were analyzed using the ARENA simulation. The comparison of output from the simulation improvement model and the output from the current model been analyzed to get the differences. According to the result, it can be seen the performance has improved by improving the process flow, reduce the distance, reduce the time and increase the number of patients. All the objectives of this research been achieved. In addition, the takt time and the cycle time of improvement layout has reduced by 12.04% compared with current layout. From the results of the simulation, the improvement layout proved to get the best performance compared to the current layout. Using the improvement layout will help the case study to improve their operational efficiency and will help the process flow of patient become smooth in order to improve the process flow of healthcare in Malaysia toward improving the service quality using lean technique.