ABSTRACT

Long waiting time has become one of the critical problems in health care service which is difficult to solve. Long waiting time not only affects patients' scheduled but also reduces service level of the hospital. There are many causes of this waiting time problem such as inadequate number of doctors to deal with many patients, bad contribution of patients' appointment time, bad room layout and so on. Thus, simulation is used as a tool to analyze the patients' flow, to determine the causes of problem and to improve the process.

The purpose of this research is to reduce total cycle time of patients by reducing the waiting time for each activity. Simulation was applied to simulate and validate the as-is process and also to determine the to-be scenario. The Excel Microsoft solver was used to find the optimal number of doctors and resident doctors. Then the optimized number of doctors and resident doctors and adapted batch size in front of the endoscope room were used to determine and verify total cycle time and waiting time.

The result of simulation showed that after the new process was implemented, the average total cycle time was reduced from 41.28 minutes to 29.92 minutes which was a 27 percent reduction in waiting and cycle time.