Simulation Modeling of Patient Workflow in Hospital Clinics

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Organizations reengineer their business processes to contain costs, improve efficiency, and stay competitive in the marketplace. With escalating healthcare costs, hospitals also seek ways to contain costs and provide quality healthcare services. Hospitals have traditionally emphasized breakthroughs in healthcare procedures and technology to stay competitive. As competition among hospitals continues to intensify, however, patients may perceive little difference in healthcare procedures and technology used by different hospitals. Consequently, hospitals come to understand that process reengineering could be a better solution to achieve competitive advantage. Just as many businesses successfully reduce costs and gain competitive advantage by reengineering their business processes, hospitals can reengineer the way certain healthcare processes are carried out to achieve efficiency and cost containment. Computer simulation, which has proven successful in improving various business processes, can also be an effective tool in searching for more efficient processes in hospitals.

This paper describes a case study undertaken at outpatient clinics of Tan Tock Seng Hospital in Singapore. In order to improve patient workflow in outpatient clinics, the hospital management considers implementing some changes in patient workflow along with new systems for patient appointment scheduling and online billing. Using computer simulation, the study models the patient workflow in outpatient clinics and assesses patient turnaround times in the patient workflow. Then, it evaluates the effects of implementing the changes along with the systems for patient appointment scheduling and online billing on patient turnaround times in the patient workflow. The results of the study will prove helpful to those considering reengineering and improving patient workflow or other similar processes in hospitals.