

A Review on Simulation and Modelling for Patient flow in the Emergency Department

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Abstract.

Several hospitals are currently paying more attention to patient satisfaction since the satisfaction it is a main issue of quality of service indexes. Ample of Asian countries' healthcare systems have a mixed-type registration, accepting both walk-in patients and scheduled patients. This complex registration system causes a long patient waiting time in emergency case clinics. Various methodologies have been proposed to reduce the waiting time. This paper focuses on exploration of the characteristics and significance of existing models and simulation techniques from the literature. The combination of agent-based modelling (ABM), DES and integration of DES and ABS technique has been chosen as the solution to modelling patient emergency waiting time in the emergency department realistically. The proactive and independent characteristics of agents in both approaches will contribute to the good representation of patient emergency waiting time in the emergency department.

Keywords: simulation and modelling; healthcare; ED; patients flow; waiting-time