In the health care industry, there are strategies to remove inefficiencies from the health delivery process called efficiency strategies. This dissertation proposed a simulation model to evaluate the impact of the efficiency strategies on a primary care clinic with unscheduled walk-in patient visits. The simulation model captures the complex characteristics of the Orlando VAMC primary care clinic. This clinic system includes different types of patients, patient paths, and multiple resources that serve them. Added to the problem complexity is the presence of patient no-shows and unscheduled patient arrivals, a problem which has been until recently, largely neglected. The main objectives of this research was to develop a model that captures the complexities of the Orlando VAMC, evaluate alternative scenarios to work in unscheduled patient visits, and examine the impact of patient flow, appointment scheduling, and capacity management decisions on the performance of the primary care clinic system. The results show that only appointment scheduling rules and capacity management decisions had significant impact on the performance of the primary care clinic with unscheduled patient visits. It is recommended that in the future the clinic addresses the problem of serving unscheduled patients from an integrated scheduling and capacity view point.

Major: Industrial Engineering

Educational Career:
Bachelor’s of Industrial and Systems Engineering, BS, 2007, University of Florida, Gainesville, FL
Master's of Industrial Engineering and Management Systems, MS, 2012, University of Central Florida, Orlando, FL

Committee in Charge:
Waldemar Karwowski, Chair, Industrial Engineering and Management Systems
Ahmad Elshennawy, Department of Industrial Engineering and Management Systems
William Thompson, Department of Industrial Engineering and Management Systems
Piotr Mikusinski, Department of Mathematics

Approved for distribution by Waldemar Karwowski, Committee Chair, on June 23, 2016.

The public is welcome to attend.