



CHOT Summer Healthcare IE Internship Program Summer 2011



Title: Patient Flow Simulation

Student name: Nooshin Valibeig
Visiting from: Northeastern University
Organization: Mass Eye and Ear Infirmary
CHOT mentor: Aysun Taseli (NU)
Project Dates: July - August 2011

Project focus

Nooshin Valibeig started in July 2011 and joined the team of Mass Eye and Ear Infirmary (MEEI) studies. MEEI is planning to move to a new building and wants to prepare adequate spaces for services in the new building. Nooshin analyzed the result of Arena simulation model of the MEEI. The model represented the state of some areas in the MEEI. The number in queue and waiting time in the lobby, valet, concierge and elevator was analyzed as parameters of state of the MEEI in five days of week and by three scenarios, best case, moderate case and worst case. The goal was to prepare some reliable input for architecture design and layout planning. To have a long-term point of view this input is based on the analysis of first and fifth year.



Making decision based on some visual inputs is easier; therefore Nooshin developed a Flexsim model, Flexsim is a simulation software with a 3D interface, by using real data for the first year and predictive data for the fifth year. The 3D movies recorded from the model and showed the congestion in the lobby and the number of people at the concierge, in the valet and waiting for elevator in any time of day, for each day of the week by all the three scenarios.

Results

Based on the maximum number of people in each area, and the standard architecture indices the spaces are identified and the movie for each day and each scenario is recorded from the model. Nooshin developed her ability to develop simulation models by Flexsim and prepared to develop a more detailed model to use for scheduling and resource allocation in the MEEI.