Problem Statement
Porter Simulation

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What is the problem that we are trying solve?

Hamilton Health Sciences are experiencing inefficiencies when synchronizing their porter services throughout each of their locations. Porter services, in this context, are defined as the movement of equipment such as beds, wheelchairs, other medical instruments and patient transfers from one location to another. Porters are a key piece of overall patient experience and satisfaction; the flow of day to day operations in a hospital depends on their efficiency. The problem HHS is facing is synchronization of porter services with the existing constraints. Porters should be able to achieve greater efficiency by minimizing client (patient/doctor/nurse/technician/etc.) wait times and reducing the total time wasted in everyday operations. Hamilton Health Sciences are lacking the tools to solve this problem. Our goal is to provide HHS with the tools to simulate their porter services so that they can test their own solutions, methods and make calculated decisions based on the results.

Why is this an important problem?

Hamilton Health Sciences are facing budget cuts and are trying to improve efficiency throughout all of their operations. There are currently a lot of new ideas and theories that have been brought up to management level that deal with overall process improvement and expense saving. Unfortunately many of these propositions cannot simply be implemented without concrete empirical evidence because of high risk value. These hospitals provide life saving treatment, and interruption of critical services cannot be tolerated. The current problem of porter inefficiency affects the workflow of every staff member using this service as well as the overall patient experience. Simply put, if the porter service becomes a bottleneck then the hospital service slows down as a whole.

What is the context of the problem?

HHS is looking for a low risk and low cost solution to generate the necessary empirical evidence so they can start deploying and practicing modifications to porter services provided. The solution is the porter services simulation which will be designed and developed by our Capstone Team. The simulation will focus on modeling just one of the HHS hospitals in the Hamilton area, with the possibility to expand to other locations in the future. Users of this simulation will be the decision support staff. They will use the raw data generated by the simulation to leverage different scenarios and how each one will affect the flow of operations. Based on the output data, the decision support staff will decide if these new ideas and plans should be implemented into the actual porter services. This project is a brand new initiative that will be developed from scratch, with the goal to expand the scope if the initial solution is determined to be a success. The biggest external resource to be used during the course of this project will be the large sets of data that HHS has available. HHS representatives have agreed to supply any non-critical data both in small and large quantities as required for the design/development of the simulation and the overall completion of the project.