Increasing capacity in the OR for thyroidectomy patients

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The Sir Mortimer B. Davis Jewish General Hospital

- A full service university affiliated medical center
  - Serves a large and diverse population in Montreal
  - Provides a broad range of inpatient and outpatient services
  - Has major tertiary & quaternary cardiovascular, neurosciences, oncology (including robotic surgery) and neo-natology programs

- Approximately 15,000 operative procedures per year
  - This number may grow 2% per year through 2015
  - Approximately 40% require overnight patient stays after the procedure
Scope of the project

- Determine whether we could increase the number of simple thyroidectomies per period given that:
  - The master surgical plan is fixed
  - The schedule of each OR is pre-determined

- Expected impact
  - Better utilization of OR time
  - Generalization of the results to other specialties
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Mathematical modeling and scenario analysis

• Classical approach to model an optimization problem
  o Multiple applications such as nurse scheduling

• Is efficient to provide the optimal solution

• Methodology: scenario analysis
Problem statement

• For each OR:
  o list of patients,
  o sequence of patients,
  o start time of each intervention

• How include additional thyroidectomy cases to ensure:
  o To finish on time
  o No cancelation due to predictable events
  o Minimize idle time
  o Minimize turnover
  o …
Our SHS poster

- Will discuss the model we built to address the challenge
- The data we needed to collect for the model
- The results of the model