

Vertical

Manufacturing	Pharmaceutical	<b>Healthcare</b>	Portfolio	Logistics	Financial	Government	Business
---------------	----------------	-------------------	-----------	-----------	-----------	------------	----------

Genre

Product Summary	<b>Project Review</b>	White Paper	Value Proposition
-----------------	-----------------------	-------------	-------------------

Client

**CARILION CLINIC**

**MedModel**<sup>®</sup>

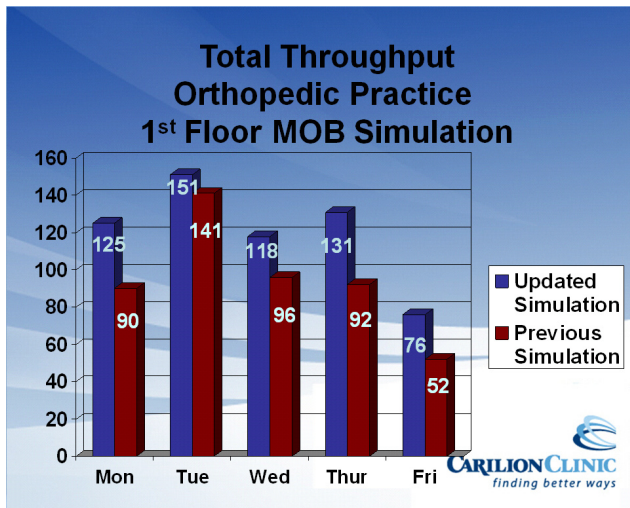
Situation

Carilion Clinic constructed a new 220,000 square foot outpatient facility in Roanoke, Virginia in order to centralize the services of multiple Carilion affiliated specialty practices as well as education and research centers. This 5 floor clinic would allow 65 providers from 13 different practices throughout the Roanoke region to converge in one patient-friendly location, only a short distance from Carilion Roanoke Memorial Hospital. Quality and service was expected to increase greatly by having referring physicians in one collaborative environment. Spreadsheet models were initially used to study the consolidation and facility design project, but provided only static information that relied heavily on the use of averages. This presented difficulty in accurately studying the complex and simultaneous processes that occur continuously in an outpatient setting.



With the limited data available, physicians and administration had difficulty reaching consensus on space requirements and efficient room utilization. At issue, could the newly consolidated practices operate comfortably on the 1st and 3rd floors, or did additional space need to be developed at additional cost?

Senior Operations Analyst Jim Montgomery used MedModel, a ProModel Simulation Solution, as an effective analytical tool that allowed Carilion administration to solve perplexing problems in staffing and facility design.



Objectives

- Affirm that the consolidated practices would fit within the footprint of the 1st and 3rd floors.
- Insure optimal location of services and patient flow within the allocated space.
- Determine optimal staffing numbers and adequate room utilization.
- Examine the impact of centralized pre-registration on patient flow.

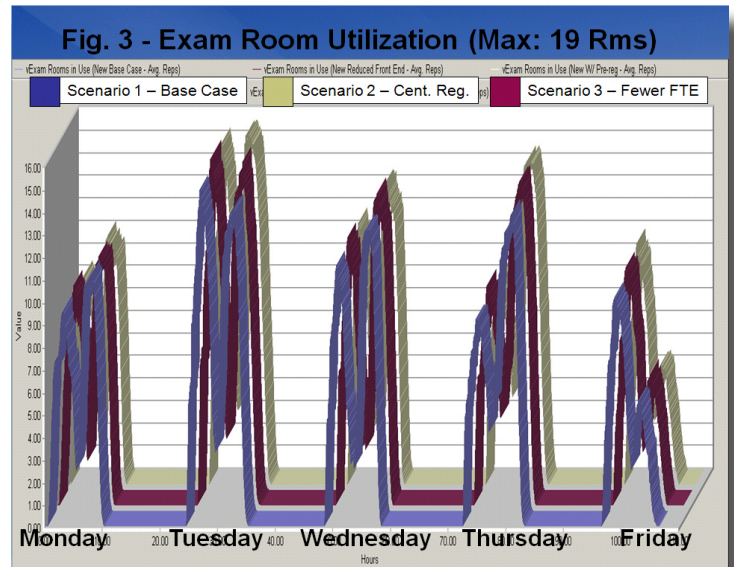
Results

1. All converging practices were efficiently co-located on the 1st and 3rd Floors, leaving open space on other floors for future practices and services.
2. Successful implementation of a call center featuring centralized pre-registration.
3. Reduction in 1st floor front office staffing from 10 to 6 FTEs.
4. Verification that a reduction in nursing staff was not the optimal choice.
5. Introduction of centralized surgical scheduling on 3rd floor.

Solution

A MedModel solution was developed which modeled the proposed 1st and 3rd floors designs of the clinic in order to analyze capacity and resources against the current data on patient flow from all the converging practices. The simulation examined the individual practices over a 5 day period (Monday through Friday) during regular business hours. The measuring criteria consisted of the following:

- Examine Room utilization
- Physician and Staff utilization and efficiency
- Number of patients in check in queue
- Time spent in check in queue
- Patient activity times
- Number of patients in X-Ray queue



The patient flow process in the simulation involved routing patients through a series of location scenarios on the 1st and 3rd floors where services were administered.

After multiple scenarios were run, the output data confirmed which scenario would provide adequate room and staff utilization, as well as centralization for optimal efficiency. The administration used this data to convince physicians who were skeptical about lack of space, that there would be sufficient room for the consolidation of practices on the 1st and 3rd floors. In fact, the analysis showed that on certain days of the week there were not enough providers to fill up the excess capacity on those 2 floors.

The simulation analysis allowed the administration to safely place the check-in, x-ray, castroom, and occupational therapies on the 1st floor, as well as the implementation of centralized pre-registration and reduction of the front office staff from 10 to 6 FTEs. On the 3rd floor, 9 specialty practices including Surgery, Trauma, and Neurology were able to fit comfortably, continue appropriate patient flow levels, and improve quality care due to the centralization of interdependent practices on that floor.

