

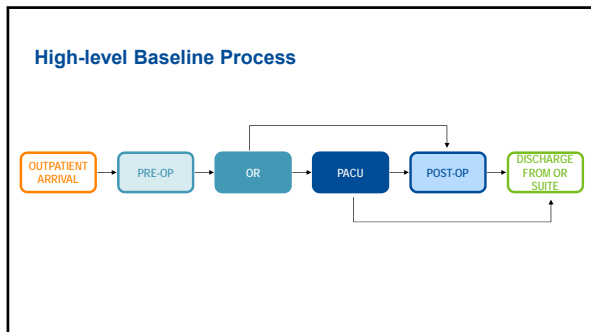
### Our Tools

- DISCRETE EVENT SIMULATION (DES)
- 2P/3P (full-scale mockups)
- Value Stream Mapping
- Process Mapping
- Interactive Data Visualization
- Root Cause Analysis
- Personas/Scenario Modeling
- Concept Development
- 5S
- SIPOC



### Background

- New surgical suite to open in near future
- Spaces involved in design
  - Pre/Post-OP Care
  - OR
  - Post-Anesthesia Care Unit (PACU)
- Block scheduling
  - Allocation of OR resources to a surgeon or group of surgeons for a specified day and time
- Metrics of success in order of priority
  - OR utilization (reserved, occupied, turnover)
  - Total patient waiting



### Client Challenges

Questions to answer:

- How many patients can use the space?
- Which patient type and surgeon specialty will use the new OR?
- What is the OR suite efficiency?
- Could merging spaces support efficiency?

6 Scenarios to test:

PATIENT POPULATION		OPERATION
Option 1	Population 1	Allocated Space
Option 2	Population 2	Merged Space
Option 3	Population 3	Merged Space

Constraints to consider:

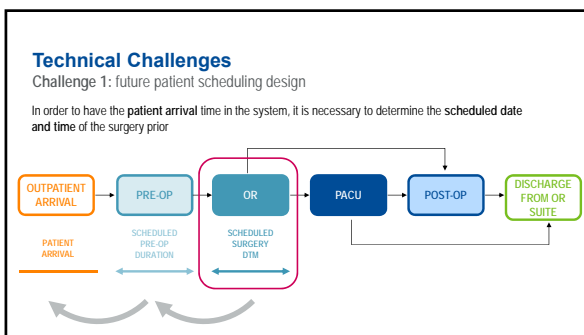
- Block Scheduling
- Fixed number of each space type
- 8 hour block length
- No overtime activities
- Targeted OR utilization

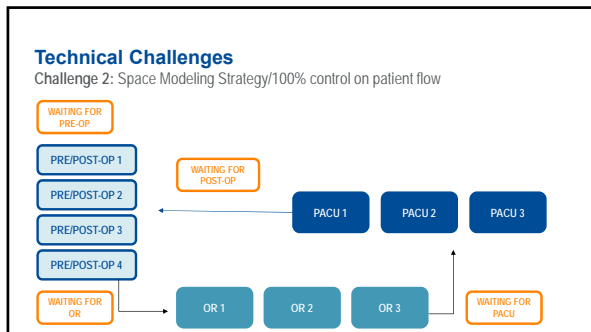
Metrics to track:

- Patient waiting time
- OR Utilization

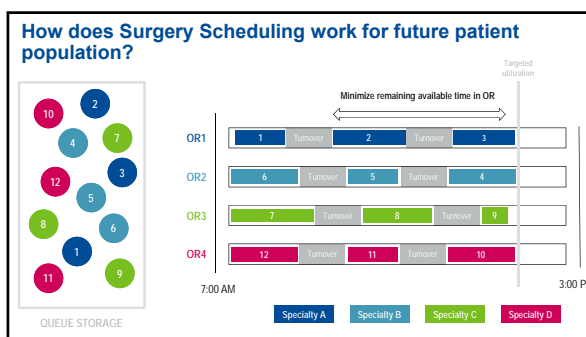
### Why SIMIO?

- Strategically
  - DES offers the ability to test various scenarios before live piloting
  - We have been using Simio for over 5 years
- Technically, Simio offers
  - Advanced DES capabilities
  - Minimized modeling effort with pre-set functions
  - Ability to import architectural drawings
  - 3D view to achieve quicker client buy-in
  - Outputs are easy to visualize both in/outside of Simio

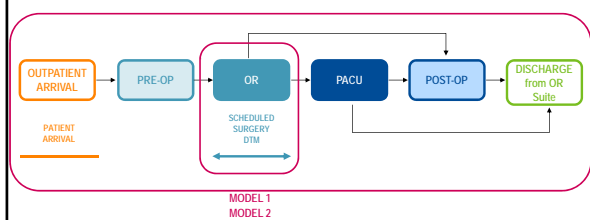




## Scheduling Surgery Cases



**How is the scheduling effort incorporated in the overall model?**



**Scheduling Model - Improvement Areas**

- 1. Insert the surgery case in the queue storage when patient is deemed ready for surgery  
→ Inform and improve lead time
- 2. Improve the selection of surgery cases longer than available time
- 3. Automate the interaction between the 2 models to expedite analysis process

**Call to learn:**  
 Simio can be used on a daily basis in medical organizations to generate surgery schedules and help anticipate bottlenecks. Any experience on this subject?

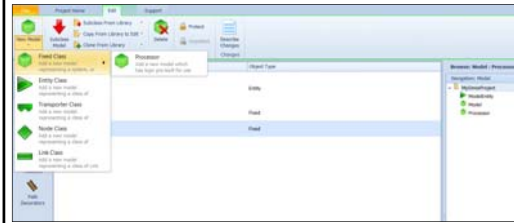
**Fixed Classes in Simio**

**Two Choices For Modeling Space**

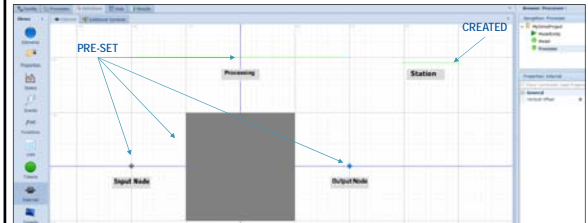


- Servers have comprehensive pre-set functions that were not needed for this exercise

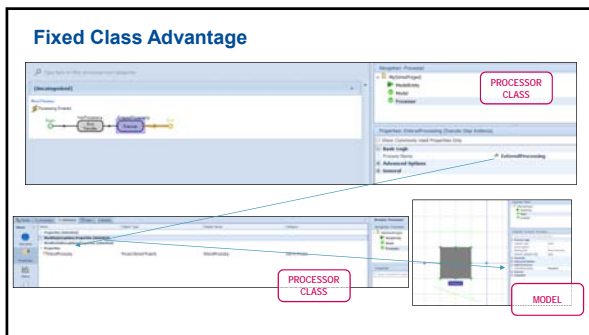
### Fixed Class Advantage



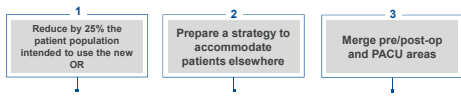
### Fixed Class Advantage



### Fixed Class Advantage



### Outcome and Decisions



- Opportunity:** This tool can be used to test different:
- Block assignments
  - Patient populations

