Wobegone Medical Center
(The above average hospital)
Surgery Case Study

Team members:
Bold, Fresh, Decisions Consultants (BFD)
Bludgeon Surgery Associates, Inc. (BSA)
Mehtu Medical Center (MMC)
Buck Turgin, CEO
Oversight Architects & Engineers
Fran Stein, Infection Control Officer
Gutbuster Construction, General Contactors
Vicky Striker, Director of Peri Operative Services

Phase I – The Planning Process (Frank)

Vicky doesn’t panic easily. She worked her way up through the surgery ranks as a circulating nurse, clinical coordinator for cardiovascular services, and then Director of Perioperative services. With a reputation as a tough but fair person, she has found the past five years as the Director of Perioperative services to be rewarding.

Despite continuing her education, receiving a master’s in nursing, nothing had prepared her for her new assignment as a member of the recently formed surgery planning task force. Vicky now found herself in the middle of a world with conflicting goals, new terminology, and demands for information and decisions that were confusing.

Several factors had contributed to the formation of the task force. The hospital’s major market competitor, Mehtu Medical Center (MMC), has recently announced their plans to create an orthopedic center of excellence. Bludgeon Surgery Associates (BSA), the highest volume surgical group, immediately demanded comparable, dedicated, facilities. One of the older surgeons revived the charge that unless he had a room with horizontal laminar air-flow he could be liable for litigation if there was an infection after one of his hip-replacement cases. A master planning assessment of the existing surgery had identified infrastructure and other space shortages. The hospital had recently established a level I trauma service, placing pressure on surgery to assure an available operating room at all times.
The first round of interviews by the outside planning consultants (BFD, Inc.) had not gone well. The bright, young, MBA consultant assigned to the project had been immediately attacked by the surgeons at the kick-off meeting. Challenged on his experience and knowledge, he stumbled on key questions related to specialty operating room requirements, room sizes, and the need for a physician lounge.

The consultants were pushing for a new concept called an “Interventional Platform,” integrating surgery, interventional angiography, cardiac catheterization, and endoscopy into one suite with common support components. Buck Turgin, the CEO, was interested in the potential to achieve long term flexibility and operational economies of scale by optimizing support staff and space. Oversight Architects presented examples of similar facilities that their firm had recently completed. All of the affected services viewed this concept with suspicion, fearing loss of control and the potential under-sizing of facilities.

The surgeons were starting to become impatient. Several key doctors argued that two more operating rooms could be built immediately by moving the locker rooms “somewhere else.” “We don’t need big rooms,” was the response when the architect pointed out that the two rooms would be slightly over 400 square feet. “Just give us 7:30 starts and we’ll make it work.” At the same time the new neurosurgery chief was demanding that he needed a 900 square foot room for his robotic and stereotactic equipment.

A lot of time had recently been committed to the institution wide lean/Six Sigma. Vicky was struggling to see how all of the work and time that her staff had committed could be integrated into the planning process. Some of her staff opposed to the lean team recommendation for the elimination of sub sterile areas between operating rooms. Oversight Architects pointed out that this would allow more space for the new OR’s and that “flash” sterilization would be provided either in the “core” or in a single “quick” processing area near the soiled elevator to CS.

Historical workload data for the past five years are as follows:

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<th>2008</th>
<th>2009</th>
<th>2010</th>
<th>2011</th>
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<td>9,873</td>
<td>9,720</td>
<td>9,903</td>
<td>10,114</td>
<td>10,541</td>
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</table>
BDF forecast a five percent net growth based on a service area demographic analysis and the impact of the new Mehtu ortho program. Again, the surgeons shot back that this was crazy and would paralyze their ability to grow.

**Planning Issues/Questions**

After the second meeting, Buck cornered Vicky outside the conference rooms and asked her to take charge of this process. “We need for you to help us achieve a plan that meets the Hospitals operational and capital goals and keeps the doctors happy. I know you can do it!” “Thanks, I think,” was her mental reply.
Phase I questions: If you were Vicky, how would you proceed?

1. What would you identify as the most important steps in establishing an effective planning process?

2. What are the key issues relative to the evaluation of “Interventional Suite” concepts?

3. What information should you provide, and how best to provide this information, to the planning process to make sure existing issues are resolved and planning addresses future needs?

4. What analyses would you want your consultants and architects to provide to determine the overall size of the department?

5. What are the pros & cons of designing a OR’s with, or without, sub-sterile areas?

6. How would you ensure ongoing awareness and engagement by the many stakeholders involved in this process?
Phase II – The Operating Room and Technology (George)

Even Vicky had to admit that the planning process had turned out very positive, due in large part to her commitment of major time and effort to “get the boat straight.” The integration of the hospital strategic plan with the work by BFD had resulted in the realization that the original forecasts were too conservative. Administration had also committed to a design that would allow for future growth. The result of the programming process was a plan for 10 “universal” operating rooms.

Having lived in a 1970’s vintage surgery suite, Vicky wasn’t sure she knew what a “universal” operating room encompassed. Oversight Architects had shown her plans, but she couldn’t really visualize how well the rooms would work for her. Almost every day different vendors were calling her with offers to provide “free” drawings of her new operating rooms.

A new staff member was now engaged as part of the planning team. Fran Stein immediately started talking about ICRA, infection control issues and the fairly high endemic rate of tuberculosis in the hospital service area. Vicky thought ICRA was the Greek that flew too close to the sun – what was she talking about? Then the engineers started talking about HFI Guidelines for air changes and humidity control.

On Monday Oversight had dropped by a large roll of drawings and a set of “specifications” that was at least two inches thick. “We need you to sign-off on these documents by Friday,” Gary Gaunt, the project architect, stated as he ran to another meeting. When Buck Turgin saw Vicky on the way to the cafeteria he reiterated the need to get the project out to bid ASAP. He also stated that the project cost was over budget and that “we” needed to think creatively about scope reductions. Images of the Lone Ranger and Tonto came to mind. Vicki knew which role she was filling.
Phase II Questions for you to consider:

1. How would you establish an optimal operating room size given the conflicts between the desire for more (smaller) rooms that drive revenue increase and rooms sized for super-technology?

2. How should information from equipment and other vendors be integrated into the planning and design process?

3. How can she verify that drawings and specifications are appropriate for the project? What human factors and ergonomic principles should you be mindful off in selecting technology?

4. How can you ensure these operating rooms are designed for maximum flexibility and efficiency?
Phase III – The Joy of Construction (Paul)

Although the planning and design process had taken almost a year, Vicky was shocked to see the construction trailers next to her existing Surgery Suite. The final design included a bank of new operating rooms and a complex sequence of remodeling to “backfill” areas of the existing suite with new patient holding/prep rooms.

During the intervening period a new group of “young Turks” had arrived promising outstanding results for vascular, neurological and other procedures through the use of “Hybrid” technology. Gary Gaunt looked stunned when they described the equipment and space requirements. Buck Turgin was both ecstatic and concerned. This could overcome the recent shift of cases to Mehtu Medical Center, but it would require big bucks. Gutbuster Contractors has assured the hospital that modification would be possible, but this would fall under the “change order” clause of their contract. Gary tried is best to keep a straight face.

During construction your Infection Prevention Department notices an increase in infections in your Burn ICU. Two of the patients have aspergillus growing in their burn wounds and have been to the OR for debridement and grafting.

Vicky longed for the days when “all” she had to do was run the Surgery Suite. She felt that Fran Stein had taken over the whole project with requirements for infection control during construction. Engineering services had started to discuss “shut downs” of areas to allow construction and other issues would risk upsetting the surgeons and create noise and other disruptions over the projected 18 month construction period.

Just then the phone rang. It was a headhunter recruiting for a position in Hawaii.
Phase III Topics for discussion:

1. What is a “hybrid” operating room what are the implications for the operating room design?

2. What are the key considerations in determining if the Burn ICU infections are related to the construction underway in the OR?

3. How can surgery maintain operations in an assured safe environment?

4. What are the key considerations for a phasing plan that will allow maintenance of operations & preserve patient safety?

5. How can Vicky contribute to the evaluation of “change orders?”

6. What are other ways to evaluate the process, progress and outcomes of the new surgical suites?
Selected references
