

The Production System

The medical facilities at Shouldice consist of five operating rooms, a patient recovery room, a laboratory, and six examination rooms. Shouldice performs, on average, 150 operations per week, with patients generally staying at the hospital for three days. Although operations are performed only five days a week, the remainder of the hospital is in operation continuously to attend to recovering patients.

An operation at Shouldice Hospital is performed by one of the 12 full-time surgeons, and assisted by one of seven part-time assistant surgeons. Surgeons generally take about one hour to prepare for and perform each hernia operation, and they operate on four patients per day. The surgeons' day ends at 4 P.M., although they can expect to be on call every 14th night and every 10th weekend.

The Shouldice Experience

Each patient undergoes a screening exam prior to setting a date for his or her operation. Patients in the Toronto area are encouraged to walk in for the diagnosis. Examinations are done between 9 A.M. and 3:30 P.M. Monday through Friday, and between 10 A.M. and 2 P.M. on Saturday. Out-of-town patients are mailed a medical information questionnaire (also available over the Internet), which is used for the diagnosis. A small percentage of the patients who are overweight or otherwise represent an undue medical risk are refused treatment. The remaining patients receive confirmation cards with the scheduled dates for their operations. A patient's folder is transferred to the reception desk once an arrival date is confirmed.

Patients arrive at the clinic between 1 and 3 P.M. the day before their surgery. After a short wait, they receive a brief preoperative examination. They are then sent to an admissions clerk to complete any necessary paperwork. Patients are next directed to one of the two nurses' stations for blood and urine tests and then are shown to their rooms. They spend the remaining time before orientation getting settled and acquainting themselves with their roommates.

Orientation begins at 5 P.M., followed by dinner in the common dining room. Later in the evening, at 9 P.M., patients gather in the lounge area for tea and cookies. Here, new patients can talk with patients who have already had their surgery. Bedtime is between 9:30 and 10 P.M.

On the day of the operation, patients with early operations are awakened at 5:30 A.M. for preoperative sedation. The first operations begin at 7:30 A.M. Shortly before an operation starts, the patient is administered a local anesthetic, leaving him or her alert and fully aware of the proceedings. At the conclusion of the operation, the patient is invited to walk from the operating table to a nearby wheelchair, which is waiting to return the patient to his

or her room. After a brief period of rest, the patient is encouraged to get up and start exercising. By 9 P.M. that day, he or she is in the lounge having cookies and tea and talking with new, incoming patients.

The skin clips holding the incision together are loosened, and some even removed, the next day. The remainder are removed the following morning just before the patient is discharged.

When Shouldice Hospital started, the average hospital stay for hernia surgery was three weeks. Today, many institutions push "same day surgery" for a variety of reasons. Shouldice Hospital firmly believes that this is not in the best interests of patients and is committed to its three-day process. Shouldice's postoperative rehabilitation program is designed to enable the patient to resume normal activities with minimal interruption and discomfort. Shouldice patients frequently return to work in a few days; the average total time off is eight days.

"It is interesting to note that approximately 1 out of every 100 Shouldice patients is a medical doctor."

Future Plans

The management of Shouldice is thinking of expanding the hospital's capacity to serve considerable unsatisfied demand. To this effect, the vice president is seriously considering two options. The first involves adding one more day of operations (Saturday) to the existing five-day schedule, which would increase capacity by 20 percent. The second option is to add another floor of rooms to the hospital, increasing the number of beds by 50 percent. This would require more aggressive scheduling of the operating rooms.

The administrator of the hospital, however, is concerned about maintaining control over the quality of the service delivered. He thinks the facility is already getting very good utilization. The doctors and the staff are happy with their jobs, and the patients are satisfied with the service. According to him, further expansion of capacity might make it hard to maintain the same kind of working relationships and attitudes.

Questions

Exhibit 5.7 is a room-occupancy table for the existing system. Each row in the table follows the patients who checked in on a given day. The columns indicate the number of patients in the hospital on a given day. For example, the first row of the table shows that 30 people checked in on Monday and were in the hospital for Monday, Tuesday, and Wednesday. By summing the columns of the table for Wednesday, we see that there are 90 patients staying in the hospital that day.

1. How well is the hospital currently utilizing its beds?
2. Develop a similar table to show the effects of adding operations on Saturday. (Assume that 30 operations