

Operating room utilization

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David Rattner in his Society of Gastrointestinal Endoscopic Surgeons (SAGES) presidential address (Surg Endosc 2006;20:1802–1808) comments on operating room (OR) utilization. His study rightly identifies non-surgical factors as a major reason for slow OR throughput. The relatively poor OR utilization in the United States (103 min per laparoscopic cholecystectomy) has been a puzzle to those of us who work overseas. Prompted by conversations with surgeons on both the east and west coasts of the United States, I attach a UK model for theater usage. Our model relies heavily on close teamworking by surgeon, anesthesiologist and OR nurses. It also depends upon the correct “architectural” arrangement of rooms to allow rapid throughput of patients.

The first key element for the OR is the provision of two ancillary rooms, the one for anesthesiology and the other for use as shared preparation space for theater trays and trolleys (Fig. 1). Prior to a typical afternoon OR session, which runs from 13:30 to 17:30, the OR nurses lay out trays for the first three cases in the preparation room (between 13:00 and 13:30). The patients are anesthetized in the separate anaesthetic room. As the surgeon approaches the end of each case (10 min before the end of actual operating), the next patient is sent for from the ward.

As the patient on the operating table is woken up and transferred to his or her bed, the next patient is already in the anaesthetic room with lines put in and so on. The patient with surgery completed is taken to the recovery area, and the next anaesthetic may begin. While this takes place, the nurses clear the used OR trays and wheel in the next set of trays from the preparation room. If there is spare time, they also prepare another tray for two or three cases in advance.

Using this room arrangement and process, it is possible to undertake six or seven cases within the session. After 4 hours, however, there is the need for a coffee or meal break, and this is often the point at which the surgeon utilizing the theatre is changed. The staff involved in this model are one surgeon, one anesthesiologist, three OR nurses (one to act as scrub nurse, the second to act as camera person, the third to act as “runner”), and one anesthesia nurse. Table 1 shows sample timings for OR lists from July 2006 and January 2007.

The American model of running an OR is really a puzzle to surgeons from the United Kingdom and Australia, where the system is as described above. In a country like the USA, where the majority of health care is privately funded, the UK model would increase throughput and drive down costs significantly.

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Fig. 1 Layout of operating room (OR) facilities in the UK. Architects drawing of the OR area in the BUPA Hospital Norwich. It must be remembered that in the UK, we call the OR the operating *theater*. This is a typical layout for a small facility, but this allocation of space is mirrored in the adjacent 1,000-bed teaching hospital and elsewhere around the country. It is very similar to OR layout in Australia

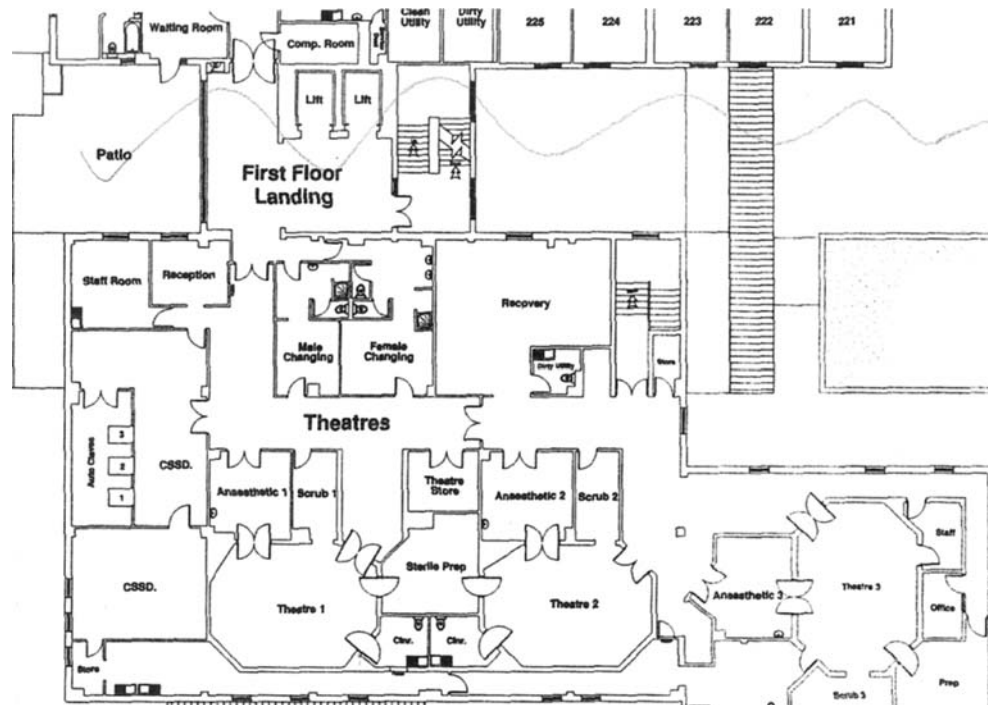


Table 1 Two OR lists as recorded in the OR book from sample Monday afternoons over the last 12 months. Surgeon M. Rhodes, and anesthesiologist P. Barker

Operation	Time into theatre	Time out of theatre
OR list – BUPA Hospital Norwich 10 th July 2006		
Gastroscopy	13:35	13:40
Repair left hydrocele	13:45	14:15
Laparoscopic gastric band	14:20	15:00
Laparoscopic LIH	15:05	15:20
Laparoscopic bilateral IH	15:30	15:55
Lap chole & POC	16:00	16:30
OR list – BUPA Hospital Norwich 8 th January 2007		
Laparoscopic gastric band	13:20	14:05
Umbilical hernia repair	14:20	14:40
Laparoscopic bilateral IH	14:45	15:10
Laparoscopic RIH	15:20	15:35
Laparoscopic RIH	15:45	16:10
Laparoscopic gastrojejunostomy & retrogrades and R ureteric		
Stent	16:45	18:00
Gastroscopy	18:15	18:25

POC, per-operative cholangiogram