Innovative approaches to turnover time

A “liberated” circulator and parallel processing helped reduce turn-over time in 2 new studies published in surgical journals.

The studies document that redesigning workflow can shorten turnover time enough to be able to add cases in the controlled environments of the studies.

Shands Hospital at the University of Florida, Gainesville, in a pilot study published in the *Archives of Surgery*, reduced turnover for 401 cases from an average of 44 to 28 minutes. That was enough to increase the number of cases completed per day from 1.8 to 2.3 for the pilot-study room. Three of the 4 surgeons involved saw an increase in their caseload.

In the project, a study team mapped between-case activities for the anesthesiologist, circulating nurse, and scrub person and proposed changes. The circulating nurse’s role changed the most, notes Juan Cendán, MD, the general surgeon who led the study.

In diagramming between-case activities, the team found the circulator’s duties included delivering specimens, picking up medications, and assessing the next patient. In the workflow redesign, the circulator was “liberated” 10 to 15 minutes before the end of the case to allow time for these activities. Relief was provided by an assistant charge nurse.

The anesthesiologist was assisted between cases by an anesthesia technician so the anesthesiologist could go to the postanesthesia care unit (PACU) and the pharmacy.

The scrub technician’s activities did not change significantly.

The pilot has since been expanded to 4 of Shands’s 27 ORs, says Gail Avigne, RN, BS, CNOR, nurse manager for the OR and other departments.

New work model

The model, termed Transition to Practice (TTP), is intended to prepare senior anesthesia residents for private practice, where the pace is typically faster than in an academic medical center. Short cases are assigned to the TTP rooms, such as hernia repairs, laparoscopic cholecystectomies, ENT cases, and gynecologic procedures.

With a staffing ratio of 50% RNs and 50% surgical technologists, Avigne says there are not many extra RNs to relieve the circulators, so an assistant charge nurse was allocated to the project.

The TTP rooms function as a pod. Cases are hand picked, and surgeons are assigned as a reward for being expeditious. Staff are also assigned selectively. The assistant charge nurse who relieves the circulators now functions as a team leader for the TTP rooms.

“It’s been an innovative way to address turnover time,” says Avigne, though Shands doesn’t plan to expand the model to all of the ORs.

“I don’t think everyone has to do things the same way,” she notes. The model wouldn’t suit some surgeons or staff, and it wouldn’t increase the number of cases in rooms with long procedures. Nevertheless, “what happens in the TTP rooms does tend to affect the others,” she notes.

The TTP model increases costs because of the extra staffing at the end of the case. Though the authors didn’t do a cost study, they say the expense of the extra nursing time “would be small” compared with the extra revenue generated by the additional cases.

“It’s great to be able to get your cases done in a normal day,” Dr Cendán com-
ments. He says he now can complete a schedule by 5 pm that used to take until 7 pm, which encourages him to schedule more cases.

**Parallel processing**

In the second study, researchers at Massachusetts General Hospital in Boston examined whether parallel processing—performing some tasks simultaneously—could reduce turnover times for hernia repairs performed under local anesthesia with sedation.

All cases were performed by 1 surgeon who routinely operated on Wednesday and Thursday. During the study, he performed the Wednesday cases using the study protocol and the Thursday cases with the usual routine as a control. There was also a historical control group.

The major changes in the study cases, which did not require additional personnel, were:

- creating an OR team that stayed together the entire day
- performing the sedation, block, and prep in the holding area before taking the patient to the OR.

Results showed operating time stayed the same, but turnover time was significantly reduced (average 18 minutes for the study group versus 24 minutes for the control group and 33 minutes for the historical controls). OR time used on study days was reduced 33% compared with controls. The time savings allowed the surgeon to shift all of his cases to Wednesday without reducing his caseload.

**Ideas to take away**

Though the studies were limited in the types of procedures and physicians, there are ideas OR managers can take away even if their facility is not a large teaching institution like those in the studies, says Judy Dahle, RN, MS, director of OR Benchmarks, who has analyzed turnover time extensively.

Flowcharting workflow between cases, as the Shands group did, is helpful, she suggests. There may be activities that can be consolidated or reassigned to reduce turnover time.

“In both of these studies, they are rethinking the traditional roles to see if there are other ways to do things,” she notes. “When you do that, you are bound to get more efficient even if you can’t add another case to the schedule.”

**A researcher comments**

The studies, along with others in the literature, show “clinicians can and do reduce turnover times with little personal incentive,” comments Franklin Dexter, MD, PhD, of the University of Iowa, a leading researcher on OR management.

“Provided the team receives quantitative feedback and has ancillary personnel available to help them, average turnover times of as low as 20 to 25 minutes can be achieved and sustained,” he says.

There is a caution, however. With increased patient flow, nurses have reported feeling overextended and exhausted, as documented by Stahl and colleagues in the OR of the Future project at Massachusetts General. They also may not feel as connected with their patients because they have less contact with patients when awake.

In both the Shands and OR of the Future studies (reported by Sandberg and coauthors), reduced turnover time did motivate surgeons to schedule more cases. Improved workflow was also associated with greater sense of personal competence and achievement for the surgeons in the OR of the Future project.

**References**

