Creating a “visual workplace” is a principle in Lean management. Visual cues have been one solution for improving turnover time at Thomas Jefferson University Hospital in Philadelphia.

In a visual workplace, the goal is to make waste, problems, and abnormal conditions readily apparent so they can be addressed.

Eight ORs that perform primarily general and gynecologic surgery were selected for the Lean project. The health system has a total of 58 ORs.

The goal was to improve turnover time from an average of 47 minutes to 30 minutes and to reduce variation, notes Monica Young, DNP, MBA, RN, CNOR, senior clinical director of perioperative services. Turnover time is defined as wheels out (patient leaves the OR) to wheels in (next patient enters the same OR).

The project team included a certified Lean Master, Lean facilitators, nursing staff, a nursing assistant (NA), and managers.

The Lean leaders interviewed the staff, performed time studies and observations, and analyzed turnover time data.

Among solutions the team selected were to adjust nursing assistants’ hours and to use visual cues to aid turnover time, including a tablet computer for the OR charge nurse so she can monitor the status of cases from any location.

Nursing assistant roles
One issue the team identified was the need for a more structured role for nursing assistants. The assistants had competing duties, such as delivering specimens and transporting patients, which often took them off the unit. Plus, their break time coincided with the busiest time of the day for turnovers.

A suggestion was to make the nursing assistants members of a team so they would feel more valued, says the charge nurse, Debra Righter, BSN, RN.

The solution was to assign 1 nursing assistant to every 2 ORs instead of having all 4 responsible for 8 ORs.

“That gives more structure to who is assigned to each room and makes the nursing assistant feel more a part of the team for the day,” she says.
Break relief was adjusted to provide better coverage from 10 am to 2 pm. Righter’s responsibilities were adjusted during mid-day, so she would be more available to allocate resources for turnovers.

**Tracking cases by iPad**

Righter, who covers 16 OR suites in 3 locations, now has an iPad to enable her to monitor cases in all of the locations.

“I can see what’s going on without being confined to a desk,” she says.

Through the iPad, Righter accesses a web-based tracking system that pulls information from the OR scheduling and anesthesia information systems.

Color-coded flags allow her to see how turnover times are tracking with the 30-minute goal. The flag turns green when a patient leaves the OR, yellow at 15 minutes, and red at 30 minutes.

“If it’s yellow, I can find out if there’s an issue with the patient, if the room is being cleaned, or if there is a problem,” she says.

Display screens are being installed so all surgical personnel will be able to view case status.

**Other visual cues**

Other visual tools aid turnover activities:

- Nurses designed a checklist for the OR door that lists standard equipment, such as a video cart, stirrups, or special padding. The nurse checks off what’s needed for the next case. The nursing assistant can then assemble the equipment without waiting for the nurse to say what’s needed.

- A magnetic board was installed so nursing assistants can indicate when they leave and return to the unit.

Initially, the board wasn’t well received. Managers explained that the purpose was to help them get more resources to assist with turnovers if several assistants were off the unit. The board also helps managers to document the need to adjust staffing during high volume times of the day.

The assistants “are more willing to utilize the board because they realized we were doing it to help them out,” Young says.

**Tracking long turnovers**

With the iPad, Righter can document turnover times that exceed 30 minutes so reasons can be analyzed and reports produced.

The reports are also helpful in responding to questions from surgeons. Managers could pull up a report to show that in some cases, 20 minutes elapsed after the surgeon left the room while residents were closing the incision. As a result, some general surgeons now stay in the OR to facilitate completion of the case.

The data also showed other reasons surgeons were delayed. They might not have finished a case in the previous room, or they might be marking the patient’s site in the preop area. Policy requires the surgeon to mark the site before the patient is brought to the OR. Anesthesia providers, in turn, were waiting for the surgeon to start preparing the patient for induction.

**Outcomes**

Gains were made, but there is more work to do. Median turnover time (wheels out to wheels in) decreased from 38 minutes to 36 minutes. Average turnover time was reduced from 47.17 minutes to 41.00 minutes. Variation was reduced from a minimum-maximum range of 25.48 minutes to 12.59 minutes, with the standard deviation reduced from 6.69 to 3.31.
Lessons learned

Young points to some lessons learned:

- Enlist strong individuals for the Lean team who can address pushback from peers when changes are introduced.
- Involve as many staff as possible in the decision making.
- Post turnover time data in a visible location so everyone can see it.
- Collect the right data. In addition to total turnover time, consider measuring increments such as room ready to patient in and patient in to incision as well as turnover time by physician and specialty.
- Distinguish between gaps in the OR schedule, such as including add-on cases, rooms that finish early, or a surgeon not ready for the OR, and turnover time, to avoid skewing the turnover time data. ❖

—Pat Patterson

Thomas Jefferson Hospital’s Lean turnover time project was presented as a poster at the AORN Congress in March 2012 in New Orleans.