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COVER STORY
by Shelby Evans

Sweet 15

In April, St. Joseph Hospital, Orange, opened a new **high-tech operating room** to test it out. Now surgical teams are lining up for a chance to work in **Suite 15.**

if working in the ORs currently under construction in the new patient care center seems far into the future to St. Joseph Hospital staff, they can glimpse just how futuristic it will be by stepping into Suite 15 now. The new "Smart" OR suite is integrated, ergonomic and sleek. It was installed to pilot a design that would be expanded to all of the new ORs — a prototype for surgeons, OR nurses and technicians to see how well it works before the systems are added throughout the new wing.

After 4 months, what's the feedback? Joanne Stermer, MBA, BSN, RN, executive director of surgical services and endoscopy, revealed the biggest complaint from the surgical staff so far: "I want to be in there!"

It seems this suite's pretty sweet.

Get Smart!

The Smart OR at St. Joseph Hospital combines the latest technological features to bring a world of access to the fingertips of the staff within the surgical suite — a bright, ergonomic microcosm with full access to the hospital's departments, records and expertise. The suite is designed to provide an optimal operating venue for the entire team as well as the patient.

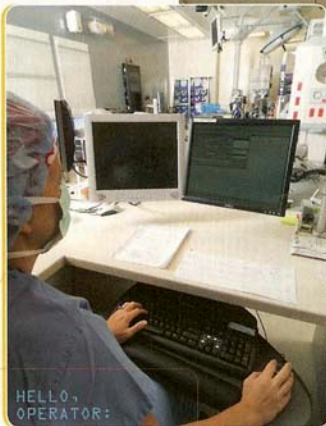
With a substantial increase in spine cases in the past year and insufficient capacity to handle the caseload, the surgery department had an immediate need to build an OR. Stermer saw an opportunity.

"We wanted to have state-of-the-art OR suites in the new patient care center," she said. "So when we were in the process of building out this [OR] and thinking of the new ones, we started looking at this technology. I started talking to vendors and [envisioning] a learning lab. So as we move into the new rooms, we'll be ready, we'll know what works, what doesn't work. We'll get the surgeons, the staff, all accustomed to it."

The manager for orthopedics, Cynthia Aludino, BSN, RN, CNOR, an OR nurse for 24 years, sat down with architects to design the room, and then worked with computer system, lighting and hardware vendors.

"She did site visits; her team was involved as they were building out the room," Stermer elaborated. "They would go in the room and say, 'We need the LCD screen here and we want the view boxes here.' They picked out the flooring; they were involved with everything."

"We looked at facilities and the type of patients we [care for], because we want the OR to be user-friendly for everybody, not just for orthopedics and spine [cases], but also for doing laparoscopic cases, general cases or neuro," Aludino added. →



HELLO,
OPERATOR:

(inset) Beth Lung, RN, mans the OR station; the bank of computers is used for documentation, accessing records and digital radiography and controlling the Smart OR system. Gustavo Gallan, CRT, Lung, and Cynthia Aludino, BSN, RN, CNOR, manager for orthopedics, show off Suite 15.

PHOTOS
by Gary
DeGalla



The **suite** is designed to
provide an **optimal**
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as well as the patient.

"[The setup process was] about a year. We had to get input from the surgeons, anesthesia, X-ray; everybody was included."

Among the group involved was Christine Phipps, RN, CNOR, assistant director of the main OR, who emphasized consulting inhouse staff was imperative.

"In the old days, someone would make a decision: 'You're getting this,'" Phipps said. "That's just not acceptable anymore for nurses or physicians. We all need to be part of choosing and experiencing and trying out products. And then I think you get better feedback, better buy-in."

"When we first opened [the Smart OR], lots of people wanted to work in there; they wanted to see it, touch it, feel it. For the ones who were involved, there's more of an ownership and understanding of the mechanism, how the room works," she added.

Universally Fit

In designing the Smart OR, universal functionality was key. The suites were designed to be suitable for the range of minimally invasive surgeries done on the unit.

"[We can do] general surgery, a lot of endoscopic surgery, laparoscopic cholecystectomies, endoscopic bowel resections, gynecologic surgeries, neuro and bariatric surgeries," Phipps elaborated.

"Where we're headed in the future is universal ORs," she continued. "The minute you start designating certain OR suites for certain procedures, you limit your scheduling potential. In this day and age, we're running a business; we can't have that."

The St. Joseph Hospital team did its homework, visiting facilities with similar systems, meeting with vendors and testing equipment to assemble the elements that would create a truly multifunctional room. The features and layout were all taken into consideration, Stermer said. "We arranged the overhead lights in a way that they could be used in all different kinds of cases, as well as the placement of the booms and everything else."

"All types of surgery that we do can basically [be performed] in that room," Aludino confirmed. The exception is total joint replacements, she explained, which need to be done in a laminar airflow room. It's all in the plan.

"Four out of those 14 new rooms are designated laminar airflow," Phipps said. "The style of the room is the same for all the rooms. So even though it's laminar airflow, we can still go in and do a spine in there, neurosurgery, endoscopic surgery, bariatric, robotic ... anything we need to put in there, it can do everything," she emphasized.

"Now that we're working in the room, we're getting used to it; we're getting all the different surgeons onboard with it. And we're excited about putting this new technology in every single OR in the new wing," Stermer said.

Connecting the Dots

"The Smart OR is totally integrated," Stermer enthused, citing the capacity for instant connectivity with radiology, lab and off-site consultants by two-way audio/video conferencing.

"You can actually have a camera in pathology where a physician can see his specimen if he's doing a frozen section, and be able to talk in video-conference to the pathologist," Phipps explained.

"The integration is amazing," Aludino agreed. "It really helps the nurse a lot, too. There's not a lot of wasted time; you can pull things up with the touch of your fingertips."

INTELLIGENT DESIGN:

Lung and Aludino inhabit the Smart OR. Nurses were integral to selecting features and designing the suite in partnership with other surgical staff and the system vendor.



"After they take an X-ray, instead of pulling up a hard copy, they can pull it up in one of the monitors that's around the field, so the doctor doesn't have to look back at a hard copy," she explained. X-rays also can be compared by using multiple monitors at the same time.

And the capabilities don't stop there. "For a neurology case, if you have image-guided surgery you can integrate with that type of technology and see it right on the screen in front of the surgeon," Stermer said.

Touch-screen and voice-activated controls can be used for surgical equipment such as electronic cautery, insufflators and stereotactic neurosurgical devices. "The scrub nurse or the doctor could activate it right in the surgical field," Stermer said. The controls also can be used to control the OR environment's lights and cameras.

Up to Speed

For a multifunctional system that handles such complexity, the Smart OR has been fairly simple for the staff to learn to use.

"We had the company come in to train the nurses who are using it most of the time — they get extensive training," Aludino explained.

At a station within the room, a nurses desk faces the OR field, equipped with three computers, for documentation, to run the Smart OR system and pull up PACS (picture archiving and communications system) that accesses digital radiography.

"Once you know the capabilities of the room and what you want to do, you just have to use a touch screen to pull up whatever you need," Aludino said.

"There's a lot to learn — which computer does what," Phipps added. "It is challenging to make sure everybody gets in there."

Aludino acknowledged there's a learning curve for nurses who are not computer savvy. But, she noted, "it's not difficult; it's just a matter of learning, going through the training. Everybody was excited to learn."

It's What's on the Inside

The sleek look of the Smart OR is undeniable. But the streamlined, uncluttered design also holds a host of ergonomic advantages. "One of the benefits is the nurses don't have to drag monitors into the room," Aludino said. "Now everything is within their reach, hanging on booms."

"If things are off the floor, they're not tripping over them and they're at the right level," Stermer said. "In the traditional way we had been

doing it, we had these things on movable carts," she explained about improvements in the ease and ergonomics of setting up the room. "We'd ask the support staff to bring the cart into the room, get it set up, position it on either side of the patient, depending on what we're doing. Now we don't have to do that because it's all on a boom. You easily push levers and maneuver it around the patient, the OR table."

"It's got to be accessible," Phipps concurred. "The role of the OR nurses has become very diverse and also challenging. They've got so many things they have to take care of, and not just patient safety, but patient documentation. They've got to make sure we're compliant, that we do everything the right way."

Admiring the View

Visibility is a vital component of the Smart OR, allowing the entire team to view every detail of the surgery. "We can see things happening inside of the wound," Stermer said. "The surgeon is looking through a little laparoscope but everybody can see it all around the room, from every angle."

Naturally, the cameras are state-of-the-art — a surgical camera embedded within the light provides visual access of open cases and the endoscopy cameras feature progressive-scan, high-definition technology. Phipps elaborated that, with the total visibility, "it certainly increases the interest level. And it allows the staff to see exactly where we are," she explained, noting the visibility enhances the collaborative atmosphere among the team. "If something happens, or they're getting ready to finish, you can anticipate what they need next."

The documentation advantages are extraordinary. "We document what we do for the patient in a computer system as well, and that's all integrated," Stermer said. Procedures can be digitally captured and

archived. The system writes video and images onto removable storage: CDs, DVDs and USB-compatible external drives and onto hospital networks and servers.

Ever-Evolving

"By the time we're opened, everybody will know how to use the room," Phipps said of the new ORs, which will open next year. And the team is enthusiastic about the Smart OR's capacity to evolve to meet their changing needs, allowing them to do their jobs more easily, effectively and comfortably.

She continued to note that, the way the team uses the Smart OR will likely evolve as well. "It's very versatile," she said. "You've got so much technology you're not quite sure how you want it to work for you." Already the team is enjoying some of the little luxuries, including the fact that a portable MP3 player can be plugged directly into the Smart OR's electronics. Phipps noted the Smart OR fits well with the increasing challenges of OR nursing.

"It seems to be getting a lot more complex and stressful for OR nurses in general," she said. "I think we need to be really cognizant of that. Nursing satisfaction is one of the most important things we look at in the OR."

Stermer agreed. "I think we're already seeing it's a recruitment tool because people get excited about coming to a place that has new technology and the latest innovations, things that make their job easier," she said.

"When you're in this type of room, it's state-of-the-art. Everything is integrated. It's kind of exciting for an OR nurse to work in a room like that." ■

Shelby Evans is associate editor at ADVANCE.