

**OR design & construction**

## Lines blurring between OR, imaging

**T**raditional separations between the perioperative and interventional imaging departments are disappearing as advances in medical technology alter the locations of surgical and interventional imaging procedures.

While most of the change is occurring in large teaching hospitals and academic medical centers, some community hospitals are also starting to address the trend through integrated architectural designs, says Bill Rostenberg, FAIA, FACHA, Anshen + Allen Architects, San Francisco.

"Integration of imaging and surgery is not limited to academic centers," he says. "It follows an evolution in health care that is most dramatic in academic medical centers, as they tend to be the early adopters."

The goals for an integrated interventional surgery and diagnostic suite are to avoid unnecessary duplication of space, staff, and equipment and build in flexibility for new procedures, he says.

These types of designs are underway at several Kaiser Permanente hospitals in California and UCLA Medical Center's Westwood and Santa Monica replacement hospital projects.

"(Westwood) is probably one of the most visible examples of a new replacement facility that is responding to the integrated interventional suite," Rostenberg says. Santa Monica UCLA Medical Center is still in the early phase of development.



*An operating room at the new UCLA Medical Center. Courtesy of UCLA Medical Center.*

### Less-invasive procedures drive change

There are early signs that this blurring between departments is happening in general and community hospitals, he notes.

For example, surgery, cardiac catheterization labs, and interventional imaging departments have historically been physically and functionally separate units. "This is true now even though the same procedures take place in different departments," he says.

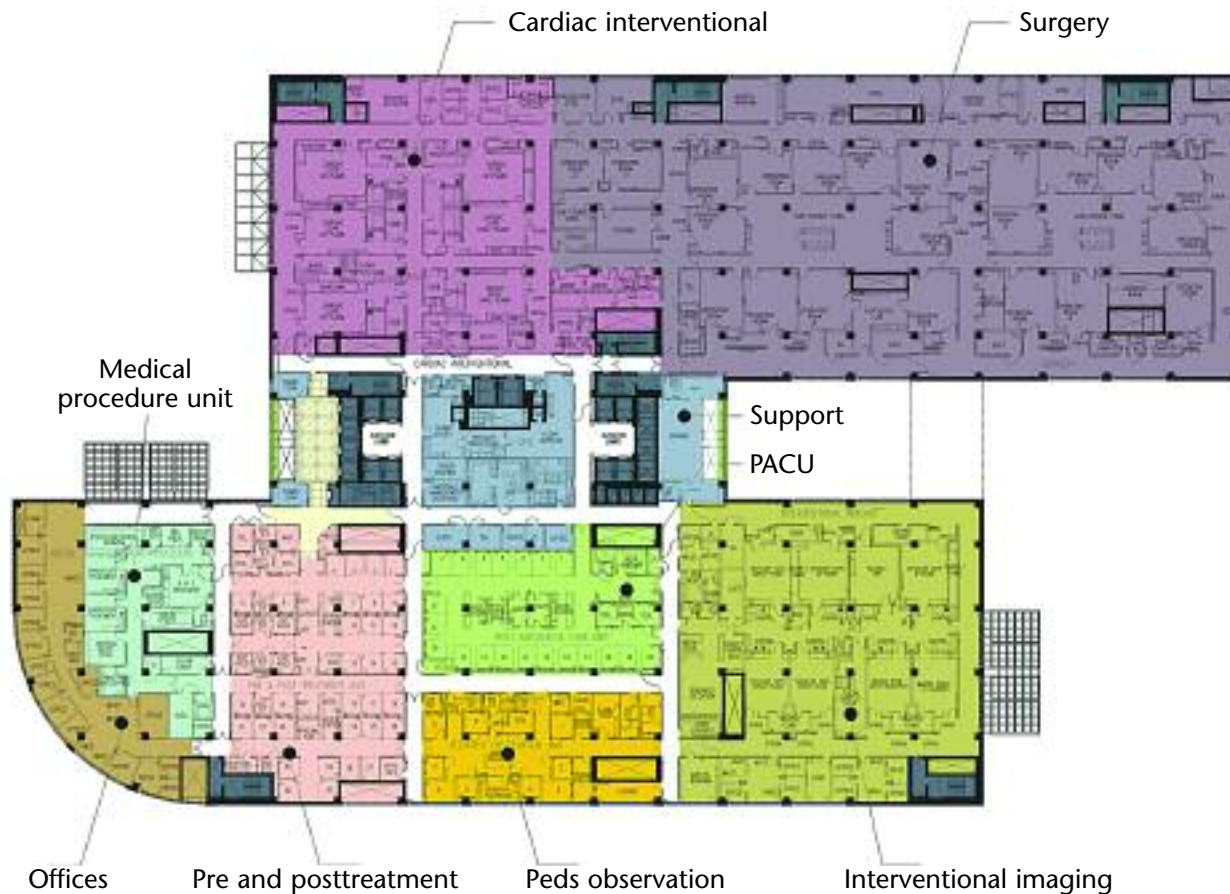
But some hospitals also are interested in new "integrated" designs that share support space in such areas as supply and the post-anesthesia care unit (PACU).

"Any hospital, regardless of size, is interested in providing services that are less invasive and do not require unnecessary duplication of staff and equipment," Rostenberg says. "We are seeing complex procedures done in interventional rooms that 5 years before were only done in the OR. There are overlapping surgeries in the OR, cath lab, and interventional imaging."

For example, interventional radiologists are doing procedures that include angiographies, balloon angioplasty, biliary drainage and stenting, central venous access, fallopian tube catheterization, gastrostomy tube placement, needle biopsy, thrombolysis, transjugular intrahepatic portosystemic shunts (TIPS), and vena cava filter placement, according to the Society of Interventional Radiology (SIR), Fairfax, Va.

Interventional radiology is a branch of radiology that was born in the 1970s and earned recognition as a medical specialty by the American Board of Medical Specialties in 1992. There are approximately 5,000 practitioners in the US.





*An integrated interventional suite at the new UCLA Medical Center in Los Angeles. Courtesy of UCLA Medical Center.*

### **Blurred lines causes turf battles**

The growth of interventional radiology has led to turf battles, in some instances, between surgeons, cardiologists, and interventional radiologists, Rostenberg says.

"The turf battles tend to be stronger in academic medical centers, but it also happens wherever minimally invasive surgery is in demand."

Competing specialty physicians "are looking at the same pool of patients to expand their markets," he says. "This affects nursing and staff at hospitals that don't have a solid game plan."

Minimizing turf battles by integrating departments takes leadership from the top, he says, noting, "Every department is competing for patients. At a certain point, the CEO has to help create a vision for departments to work more collaboratively."

In situations where ORs and interventional radiology departments are evolving along separate lines, problems include finding trained staff, purchasing equipment, and finding space for preoperative and postanesthesia care.

"Suddenly, you need 3 times the space, support staff, and infrastructure," Rostenberg says. "I am seeing hospitals recognize this problem and begin planning for integrated platforms with surgery, cath lab, and interventional radiology. With an integrated model, these 3 areas can be modularized and made efficient and flexible."

One of the biggest limitations ORs have for interventional procedures is lack of comprehensive, integrated digital imaging management systems, he says.

“New facilities have the opportunity to take steps to make this available. Older facilities are struggling with getting digital imaging into the ORs. It is only a matter of time before digital imaging will be pervasive in the OR.”

One way to avoid ad hoc OR renovations that duplicate efforts in other departments is to develop a strategic plan. In many instances, Rostenberg says, the evolution of perioperative services and support for interventional radiology procedures creates “opportunities for new integrated design concepts.” ♦

—Jay Greene

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