# In the Swing of Things

## If your cardiac cath lab is looking to save money while increasing throughput, keep reading—swing labs just might be the answer

by Dana Hinesly

For hospitals that perform cardiac catheterization, lab time is a hot commodity. The in-demand equipment involved is accessible only when the room is clean and ready for a new patient, a process that often can take 30 minutes or more—time that is essentially wasted as the X-ray sits idle. With hundreds of thousands of procedures taking place in the United States each year, these minutes can add up quickly.

There is truth in the old adage that time is money. This is especially the case with US hospitals, where the pressure is on to maximize each dollar spent—particularly in specialty labs and facilities—while continuing to provide exceptional service to patients and physicians alike.

Fortunately, good news is on the horizon. A relatively new change made to the standard cath lab makes it possible to meet all of these goals. Called a "swing lab," it sounds like any hospital's impossible dream: spending less and getting more.

### Swinging Along

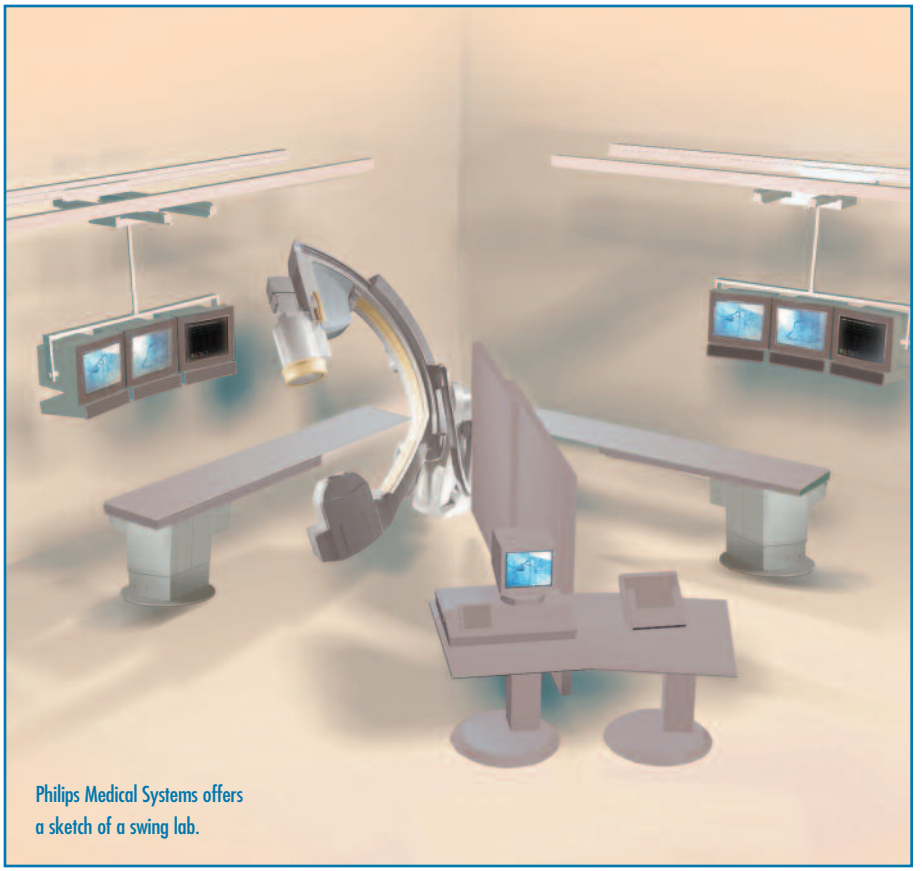
The concept is simple—based on the time-tested notion of making the most of what you already have. A swing lab works by taking full advantage of an existing X-ray machine's capabilities.

In a traditional, single-plane (or monoplane) cath lab, the X-ray is dedicated to the lone bed in the room. The result is a lot of waiting: technologists waiting to clean a room, physicians waiting for available equipment, and patients waiting for their procedures to start. The swing lab changes all that by eliminating time when the X-ray equipment is dormant.

With a swing lab, the amount of square footage is increased (though not necessarily double that of a monoplane lab) and two sets of retractable doors divide the room evenly. When closed, these doors split the space, creating two individual procedure rooms. Each of these rooms includes a patient table and enough clearance for patients, technologists, and medical staff to navigate through the space with ease.

The X-ray tube is located along one wall in line with the doors, mounted on a C-arm that pivots on a 180° arc. This maneuverability enables it to "swing" to reach the center point of either procedure room.

The two lead doors operate independently of each other, with one remaining closed whenever a procedure is under way. After finishing in one room, the X-ray is pulled back between the doors. The closed set is then opened and the other set closed, freeing the C-arm so it can move into the other procedure room for immediate use. While the second procedure is taking place, the first patient exits, and a third can be prepped for the procedure in the open room.



Philips Medical Systems offers a sketch of a swing lab.

This way, it is possible for both labs—along with patients and staff—to maintain privacy at all times. This continual rotation also eliminates delays for the patient and keeps the X-ray machine in constant use, enabling the hospital to fully utilize its capabilities.

"The concept is improving workflow," says Marcia Wroblewski, senior marketing manager of cardiovascular X-ray at Philips Medical Systems (Bothell, Wash). "Patients aren't waiting as long, and the procedure is done quicker."

## Saving Time and Money

The minutes saved with a swing lab add up, easily accommodating more procedures and making it possible for a hospital to treat even more people.

"We projected we would do an additional three procedures a day, and we're actually doing between three and five more each day," says Charles Martin, manager of cardiac catheterization at St John Macomb Hospital (Warren, Mich). "It has increased efficiency, decreased waiting time for both the patient and physician, and enhanced patient privacy."

Just before the new year, the hospital constructed a swing lab for its 376-bed facility. Staff members pride themselves on providing exceptional care to patients in a comfortable atmosphere, and this new addition has helped them meet this goal while accomodating the area's high demand for interventional cardiovascular services.

The first procedure in the swing lab took place on December 18, 2003. In no time, St John Macomb's team had grown to appreciate the benefits the lab provides.

"The immediate feedback is that they love it," Martin says. "It's more than what they thought it would be."

The hospital immediately noticed a significant reduction of waiting time. "The swing lab provides us with two procedure rooms, and we [now] do about 14 cases a day," said Anne Marie Kaminski, administrative director of cardiovascular services at the hospital. "In a mono lab, we're normally doing between eight and 10 each day."

The swing lab saves time and improves efficiency in myriad ways. The most obvious way is by eliminating downtime, but many facilities have found that time isn't the only thing the swing lab saves them. Some hospitals' lab staffs soon become so efficient that a team member can be assigned to other duties. "It is a more cost-effective mechanism for increasing workflow and a more effective use of staff as well," Wroblewski explains.

Another example is the swing lab that Philips Medical Systems installed at Bridgeport Hospital (Bridgeport, Conn). After installation, the hospital was able to

After St John Macomb Hospital installed a swing lab, its productivity increased from eight to 14 procedures a day.

reduce annual overtime costs by $131,000. The facility also had a tangible leap in production. The hospital is now able to perform as many as 28 procedures a day—a marked increase from the previous average of seven per day. It also has increased outpatient procedures by 27%.

In fact, swing lab success stories are not difficult to come by. Washington Hospital Center (Washington) has three swing lab facilities in which staff members perform between 50 and 70 procedures a day.

## Patients and Physicians Both Satisfied

Often while nurses and lab techs are scurrying to turn over the room, they can inadvertently make the patient feel rushed and in the way. That doesn't happen with a swing lab. Since the next procedure isn't delayed because of the prior procedure, the process of moving patients in and out is more leisurely. With the relaxed turnover process, physicians, nurses, and lab techs are all able to provide more individual care.

"At St John, our ultimate goal is to provide excellent quality care, which is different from the patient's [point of view] than it is from the physician's," Kaminski says. "Quality for a patient is that nonrushed feeling and personal attention." Both are made possible through improved processes offered by a swing lab.

It also proves to be a winning combination for physicians who have constant demands on their time. The swing lab allows them to use their time more efficiently, interpreting results and visiting patients, instead of waiting for an available room.

While pleasing doctors and patients simultaneously is no small task, St John found that the swing lab manages to do both. "Doctors also want to do the best thing for the patient," Kaminski explains. "Increased patient satisfaction really is the end goal for all of us."

## When to Start Swinging

While the benefits are ample, a few unique aspects to a swing lab must be taken into consideration before construction begins. The lab will require a slightly larger space than a monoplane lab, and an extra procedure table must be purchased.

"If you have the space to accommodate a swing lab," says St John's Martin, "the construction costs won't be increased significantly."

Even with the expense of a second patient table, the costs are still considerably less than those incurred when building a monoplane lab. For example, by deciding to install a swing lab—the first in New England—Bridgeport Hospital saved roughly 90% of the estimated costs for a complete second lab.

And because the additional funds can be reclaimed from the increased production provided by the swing lab, many hospitals consider the costs to be negligible in light of the end result. "The benefits far outweigh the minimal amount of additional costs," Kaminski says. "Our return on investment was realized within a week."

Of course, the investment is only wise if a facility has the demand to warrant it. Washington Hospital Center—also a Philips Medical Systems' client—suggests that any hospital performing at least 12 procedures a day consider either building a swing lab or converting a traditional lab into a swing. Those performing fewer than that might wish to wait.

"The [need for a] swing lab is predicated by the number of patients, where there are workflow issues," Philips' Wroblewski concurs.

To help guarantee that a swing lab is the best choice, most users feel it is advisable to consult with area facilities where the technology is already in use prior to making any commitments.

"I would recommend looking at other hospitals," Kaminski says. "The physicians and staff members [will say] how great it is."

And that's exactly the case at St John. Despite an original intent to build a monoplane lab, staff members performed research and visited with several hospitals that had working swing labs in place. The findings convinced the staff that a swing lab was the best choice for the hospital, its doctors, and the patients.

"It's been very much a team effort," Kaminski says. "We're very fortunate here because our senior leadership has supported us throughout this process—all the way to the top. They've helped in making this a win-win for the hospital and ourselves."

## Getting Up to Speed

Once a hospital commits to a swing lab, it is important to educate anyone involved with the room about the new practices required for the physical operation of the lab. While the actual equipment—including the walls and C-arm—can be maneuvered easily by a nurse or lab tech, it is essential that everyone working in the lab be confident with their actions.

To that end, Philips Medical Systems takes a hands-on approach with its customers to help ensure that even the very first procedure in the lab is a smooth-running success.

"Prior to the installation, we invite two people [from the facility that is purchasing the lab] to one of our centers of excellence," Wroblewski explains. "We show them some best practices as well as how the equipment is used in a clinical environment." Then, for the first week of operation, Philips team members are on site to aide the lab teams until operating the equipment becomes second nature.

Once installed in a facility, the swing lab's positive effects are sure to ripple throughout the organization—and all the way to the bottom line. But for healthcare providers, its true value is measured in another way.

"With a swing lab, you're really providing quality care," Kaminski says. "We're all very passionate about meeting the needs of our patients and physicians, and this lab provides an environment where that is possible." MI

*Dana Hinesly is a contributing writer for* Medical Imaging.