An Innovative Setting – Hybrid Room 3D Imaging Delivers Groundbreaking Care

The hybrid operating room at St. Joseph Hospital in Orange County, California, USA, allows cardiologists and surgeons to transition seamlessly from minimally invasive to open-chest surgical procedures in the same environment. The interdisciplinary, multi-functional room maximizes patient care, improves overall outcomes and shortens hospital stays.

By Diana Smith

In 2010, St. Joseph Hospital became one of the first facilities in the United States to unveil a hybrid operating room, used to treat heart and vascular disorders in adult and pediatric patients. The 525-bed hospital completes more than 7,000 cardiac and vascular procedures per year.

Located in densely populated Orange County, the facility is located in a state that has a significant elderly population, which is continuing to experience explosive growth. The California Department of Aging estimates that in 2010, one in five residents was 60 years of age or older. That number is expected to increase significantly – 38 percent in the next ten years*. As the hospital contemplated build-out of its operating room, evaluating volume and demographics, it became imperative to design a universal room that would be highly utilized and provide faster, better and more cost-effective care.

Today, in St. Joseph Hospital’s fully equipped hybrid surgical suite, physicians perform open, minimally invasive, image-guided and/or catheter-based procedures, or a combination of procedures at the same time, evaluating volume and...
Hybrid OR
Surgery

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operating room. The hybrid room incorporates groundbreaking three-dimensional technology, and is staffed by a specially trained team of nurses, radiological technicians and cardiovascular technicians.

For patients requiring complex procedures or for high-risk patients, such as those over age 80 with valve disease or those who have had multiple heart and vascular surgeries, the hybrid room is an optimal setting. Because of the high-resolution and highly accurate 3D imaging available in the hybrid room, many of these patients are able to undergo minimally invasive procedures, rather than major surgery, resulting in the highest degree of safety, improved recovery time, and less time in the hospital setting.

A New Level of Imaging
St. Joseph Hospital’s hybrid operating room is equipped with a robotic, state-of-the-art imaging system, Artis zeego, which provides excellent image quality for interventional cardiology and cardiac surgery as well as flexible system positioning for anesthesiologists. The system has an un restricted positioning ratio and acquires even three-dimensional images. The exceptional imaging technology allows physicians to perform the most complex adult and pediatric open heart surgeries as well as minimally invasive procedures. It is one of the few hybrid operating rooms in the country with this capability.

Multiple Capabilities, Increased Efficiency
St. Joseph Hospital chose the Artis zeego system for its exceptional technology, but the physicians and staff also enjoy the benefits of other features. Inspired by advances in automated manufacturing, the Artis zeego system can be positioned exactly the way it is needed and controlled with far greater ease and precision than traditional floor- or ceiling-mounted systems. A major benefit of the system is its large volume cross-sectional imaging, with up to 47 cm in diameter offering broader coverage of the anatomy. Additionally, clinicians in the hybrid room can adjust the working height of the system, therefore reducing fatigue and backache associated with fixed heights, heavy lead aprons and lengthy procedure times, an especially important factor when repairs can stretch into multiple hours.

While the hybrid room is the most technologically advanced operating environment, it has also been a model for maximum efficiency and clinical workflow. Because it is set up for all kinds of patients, the hybrid room has a high utilization rate, optimizing efficiency and workflow. The room is scheduled every day and used for all types of vascular and cardiac procedures, including percutaneous pulmonary artery valve (Melody™) insertion, plus overflow from the catheterization labs, and even STEMI (ST-segment elevation myocardial infarction) patients.

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* Source: California Dept. of Aging, www.aging.ca.gov/stati oldest_old_population.asp

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