

St. Joseph's First to Dedicate Groundbreaking 3-D Image Technology to Open Heart Surgery

St. Joseph's Hospital and Medical Center has become the first hospital in Arizona to dedicate a groundbreaking type of image technology to open heart surgery. The Siemens technology is an echocardiography system that captures 3-D heart images in real time. Maneuvered by a cardiac anesthesiologist, the system is used to guide surgeons interoperatively by providing a detailed view of the heart and its function during surgery.

The new technology measures the height, width, depth and motion of the heart. It collects multiple two-dimensional images and within seconds reconstructs a three dimensional object on a computer screen that allows surgeons to view the heart's function and blood flow velocity through a clear 3-D image. The images allow surgeons to view any part of the heart from every angle and guides them with much greater precision.

"Before we began using the 3-D technology, we would have to take 2-D images and extrapolate from them to understand what is often very complex anatomy," says Brian deGuzman, MD, associate chief of Cardiovascular Surgery at St. Joseph's Heart & Lung Institute. "The 3-D imagery reconstructs a patient's heart on the monitor within seconds to give us a very detailed view."

"The Siemens technology is very powerful and sophisticated. It produces spectacular images to help guide us during surgery," says Lishan Aklog, MD, chief of Cardiovascular Surgery at St. Joseph's Heart & Lung Institute. "It gives us instant information to help us make informed decisions and confirm that the heart has been successfully repaired."

St. Joseph's will use the new technology for all patients undergoing complex heart surgery including valve repair and surgery for atrial fibrillation.

Drs. Aklog and deGuzman and George Gellert, MD, staff anesthesiologist; trialed the new system at St. Joseph's in late February. The hospital's two-dimensional system is being upgraded to offer the 3-D technology, and surgeons are scheduled to begin using it this spring. St. Joseph's Foundation funded the upgrade.