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## Minimally Invasive Surgery

Extraordinary innovations are taking place in the field of surgery, and University of California, Irvine Healthcare is leading the way.

### When UC Irvine's University Hospital

opens in spring 2009, it will house one of the most advanced minimally invasive surgery (MIS) centers in the nation.

What will these ultra-modern operating rooms look like? Equipment will be suspended compactly from electronically controlled ceiling booms, allowing doctors and nurses to work in a streamlined setting without the cables and carts that crowd traditional operating rooms. "All functions will be centrally controlled by touch-screen technology," says **Dr. David Hoyt**, chairman of the Department of Surgery at University of California, Irvine. "Rooms will have as many as three high-definition, flat-screen monitors,

permitting surgeons to view highly magnified images of the inside of organs. This will provide doctors with an enhanced reality of the patient's anatomy. Surgeons will also be able to review the patient's past CT and MRI scans, which will be transmitted instantaneously from the hospital's picture archiving and communications system."

**Robotic surgery.** The new operating rooms are also designed to accommodate the gold standard of MIS procedures—the da Vinci robotic surgical system. Computer-enhanced and physician-operated, the robot increases a surgeon's range of motion by providing 540 degrees of "wristing" action. This far surpasses the ability of the human wrist. The machine also eliminates the hand tremors caused by muscle fatigue that surgeons sometimes develop during operations. "At the same time, these machines provide highly magnified, three-dimensional images of the

interior surgical site," says **Dr. Ralph Clayman**, chair of the Department of Urology. The result is unparalleled surgical precision.

### The new University Hospital will house a leading-edge surgery center.

Because of these features, the robot is ideal for delicate operations in hard-to-access parts of the body. This includes removal of the prostate gland, an organ surrounded by tiny nerves that influence urinary control and sexual function. "Just a few years ago, removal of a cancerous prostate gland involved a 4-inch incision and a three-day hospital stay," says Clayman. "About 50 percent of patients experienced surgery-related impotence and 10 percent reported incontinence. Today, using robotic technology, the prostate gland can be accessed through five incisions, each smaller than the tip of one's finger. The operation is performed as outpatient surgery, with a return to normal continence in over 95 percent of patients and preserved sexual function in over 80 percent."

**Incredible advances.** Other specialties have also benefited from advances in MIS. Head and neck surgeons are now able to preserve form and function when removing tumors from highly visible areas such as the cheek. Orthopaedic surgeons and neurosurgeons routinely repair the spine through small incisions. And gynecological surgeons perform minimally invasive hysterectomies. Cardiac surgeons correct atrial fibrillation without opening the chest; bariatric surgeons use minimally invasive methods for weight-loss operations; and colorectal cancer surgeons often opt for MIS. What's next? "We're rapidly moving toward no-scar operations," says Hoyt. "It's a remarkable time in the history of surgery."

For more information on the new University Hospital, visit [www.ucihealth.com/universityhospital](http://www.ucihealth.com/universityhospital).

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