



HOAG MEMORIAL HOSPITAL PRESBYTERIAN  
One Hoag Drive, PO Box 6100  
Newport Beach, CA 92658-6100

Media Contact:  
Heidi Pallares  
Heidi.Pallares@Hoag.org  
(949) 764-6939

## **From Interactive Computer Games to the Operating Room: Hoag Becomes First Hospital in Orange County to Use High-Tech 3D Simulation Software to Assist in Brain Surgeries**

**NEWPORT BEACH, Calif., February 2, 2016** --- High-tech computer games and operating rooms may not appear to have much in common at first blush -- but Hoag Memorial Hospital Presbyterian has become Orange County's first and only hospital to treat neurosurgery patients using the same sophisticated software platform that powers today's highly immersive and realistic computer games.

Developed by a company called Surgical Theater, the software -- Surgical Navigation Advanced Platform, or SNAP -- blends medical imaging with the latest gaming technology and 3D virtual reality systems. The result, neurosurgeons with Hoag Neurosciences Institute and Hoag Family Cancer Institute say, is an extraordinarily advanced imaging tool that is revolutionizing the way they prepare for and perform delicate cranial procedures, including those involving tumors and aneurysms.

"With this advanced software, we now have this incredible virtual reality 3D imaging capability that basically allows us to do the surgery before walking into the operating room," said Christopher Duma, M.D., neurosurgeon and director of Hoag's Brain Tumor Program. "It is night and day in terms of imaging. It enables us to do extremely detailed mapping of the patient before the surgery. We are able to decide beforehand which approach we want to take surgically. It adds so much in terms of safety."

"Now that we have this, I can't imagine doing brain surgery without it."

"This is a huge leap forward for us in terms of the level of care and safety we are able to provide our neurosurgery patients," said Robert Louis, M.D., neurosurgeon and director of Hoag's Skull



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Base and Pituitary Tumor Program. “The SNAP software lets us perform an actual virtual reality ‘fly-through’ before we ever lay hands on our patients. This dramatically increases the margin of safety for patients.”

Indeed, the Surgical Theater SNAP allows Hoag surgeons to rehearse their procedures before the actual surgeries in order to plan the safest, most minimally invasive surgical approaches -- all in 3D. SNAP features Oculus Rift 3D virtual reality system, which creates a virtual “flight” through the patient's anatomy before or after surgery.

The incredibly detailed imaging made possible by the SNAP software enables much more precise surgical procedures that protect brain tissue, blood vessels, bone and other structures of and around the brain. “It allows for increasingly minimally invasive procedures, which are much better for our patients because they result in fewer complications, shorter hospital stays and overall faster recoveries and patient comfort,” Dr. Louis said.

“We are excited to collaborate with Surgical Theater and give our neurosurgeons access to this revolutionary 3D technology for every cranial tumor procedure,” said Michael Brant-Zawadzki, M.D., F.A.C.R., executive medical director of Hoag Neurosciences Institute and the Ron and Sandi Simon Endowed Chair. “As a trusted health care leader, this only furthers Hoag’s commitment to exploring and perfecting innovative treatment options to provide the best care possible, all focused on the individual patient need.”

“Every patient’s brain is unique and Surgical Theater now allows us to virtually see, study and plan an individualized surgical route to help ensure a successful outcome,” Dr. Brant-Zawadzki said.

## **ABOUT HOAG MEMORIAL HOSPITAL PRESBYTERIAN**

Hoag is an approximately \$1 billion nonprofit, regional health care delivery network in Orange County, California, that treats more than 25,000 inpatients and 369,000 outpatients annually. Hoag consists of two acute-care hospitals – Hoag Hospital Newport Beach, which opened in 1952, and Hoag Hospital Irvine, which opened in 2010 – in addition to six health centers and eight urgent care centers. Hoag is a designated Magnet<sup>®</sup> hospital by the American Nurses Credentialing Center (ANCC). Hoag offers a comprehensive blend of health care services that includes five institutes providing specialized services in the following areas: [cancer](#), [heart and vascular](#), [neurosciences](#), [women’s health](#), and orthopedics through Hoag’s affiliate, [Hoag Orthopedic Institute](#), which consists of an orthopedic hospital and two ambulatory surgical



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centers. In 2013, Hoag entered into an alliance with St. Joseph Health to further expand health care services in the Orange County community, known as St. Joseph Hoag Health. Hoag has been named one of the Best Regional Hospitals in the U.S. News & World Report Metro Edition. National Research Corporation has endorsed Hoag as Orange County's most preferred hospital for the past 20 consecutive years and, for an unprecedented 20 years, residents of Orange County have chosen Hoag as one of the county's best hospitals in a local newspaper survey. Visit [www.hoag.org](http://www.hoag.org) for more information.

### **ABOUT SURGICAL THEATER, LLC**

Surgical Theater is a privately held, leading Virtual Reality and Image Guidance software company for healthcare, and its software applications are providing a comprehensive solution that is transforming the way surgeons consult with patients, plan complex surgical procedures, and use medical imaging to navigate during surgery and post-operative review with their peers.

Surgical Theater's unique and highly innovative products allow "Surgeons and imaging to connect." Surgeons have used Surgical Theater technology in more than 1,000 plus cranial cases world-wide to help patients with tumors and cerebrovascular disorders.

To date, 3D Virtual Reality, Surgical Guidance and Navigation has been installed in leading research and teaching hospitals across the United States including; University Hospitals Case Medical Center, University Hospitals Rainbow Babies and Children's Hospital, The Ronald Reagan UCLA Medical Center, The Mount Sinai Hospital, Mayo Clinic, NYU Langone Medical Center, and others. [www.SurgicalTheater.net](http://www.SurgicalTheater.net)