

# SHARP®



## IMRISneuro: Large LCD displays help in delicate brain surgery

by Wendy Ellis

Imagine. An image so intricate, so precise that the shadow of the smallest cancer can be detected by a surgeon immersed in the removal of a brain tumor. An image so clear, it can show a patient's brain from every angle, every layer, and offer a timely answer to the ever present question, "Did we get it all?" That's the role Sharp's professional 65-inch LCD monitor is playing in the operating rooms at Children's Hospital of Atlanta, where moveable MRI machines are revolutionizing delicate surgeries every day.

"We provide MR technology-based solutions that assist in treating disease and measurably improve out-

comes for patients," says Jeff Koffman, Regional Marketing Manager for IMRIS, a leading manufacturer of surgical imaging solutions. Until now, MRI images of the brain were always done prior to surgery to pinpoint a tumor's location. After its removal, a patient was closed up and surgeons waited for the inevitable swelling to go down before doing another MRI. At that point, the surgeon could determine if any of the tumor remained. If so, the patient often went back for surgery a second time.

"Enter our technology," says Koffman. "We put the magnet on a track so we can bring the MRI machine into the operating room and image in the middle of sur-

gery." Within moments those images appear on a trio of Sharp PN-G655U 65" LCD monitors on the wall of the operating room. The surgical team can zoom in on the images, display several different views, even quad split them if necessary, to determine if any of the tumor remains. With a 2000:1 contrast ratio and a 1080 X 1920 resolution, the Sharp monitors offer the most precise picture available and are an important part of the IMRISneuro system.

### **Economies also a factor**

Post-operative imaging is only one application for the IMRISneuro system. As with any new technology, it offers solutions to many problems. "Brain surgeons have to

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deal with something called 'brain shift,'" says Koffman. "There's pressure in your head which normally keeps your brain stationary. With a traditional MRI, you might take pre-surgery images, but once you open up the head, the pressure drops and the brain actually shifts. It's hard for surgeons to plan their trajectory because everything moved." With this new technology available in the operating room, any shift that might occur is right up there on the monitors for the surgical team to see.

Moving patients to the MRI during surgery is difficult from both a patient care and an economic perspective. "Operating rooms charge hundreds of dollars a minute and the amount of time it takes to drape a patient, take them to another room and bring them back is costly," says Koffman. "If you have to redo surgery, the hospital often pays the cost. There are studies showing that using intra-operative methodology saves up to 27% by reducing the need to do the surgery over again." Not only is that savings good for the hospital, it is good for the patient, and patient safety is a motivating factor in the development of this system.

### Technical treasure

Koffman says the Sharp displays have had a big role in making this system practical. "It's all about being able to see the best image you can—and you need good equipment for that," he explains. "The key thing is that when we zoom in on an image there's no pixilation with the Sharp. It keeps the scans detailed and maintains

the image integrity. It's a good complement to our system."

Sharp's technology offers several other advantages over plasma and other LCD displays, especially in the harsh environment of an OR. First, Sharp uses an anti-glare coating that cuts the potential for reflectivity problems in the bright light. Plasma monitors, although available in larger sizes, tend to degrade over time, resulting in an uneven color and sharpness. Sharp also offers a protective overlay that can be wiped off and kept pristine between procedures, yet does not alter the clarity of the image.

In addition to the surgical images, IMRIS uses the Sharp displays to offer up a patient's vital signs, medical history and other information a surgeon might need during an operation. Sometime in 2008, hospitals equipped with the IMRISneuro will begin using it during cardiac surgery as well. Where the technology will take them from there remains to be seen.

"Our LCD displays bring a very reliable technology into the OR," says Bruce Goldstein, Senior Business Development Manager for the Sharp Professional Display Division. "We design them for signal sources that are digital-data based, coming through a PC or PC-based technology, and so their picture quality is superior in this type of application." Sharp also warrants these monitors for 24/7 operations. "You're not going to use it 24/7," says Goldstein, "but these are long procedures and the screen can be on for a long period of time without any loss of detail."

### Worldwide interest

Hospitals in India, China, Canada and the US are waiting to receive the IMRISneuro systems. Next in line is Barnes Jewish Hospital in St. Louis, Missouri, which will use two Sharp PN-G655U 65" displays with their system.

Koffman says hospitals often use their IMRISneuro systems as a recruitment tool to attract neurosurgeons. It brands the hospital as cutting edge. Ultimately, however, it's the patient who benefits. "The more information available quickly and clearly to the team in the OR, the better they can respond to any situation, helping to ensure the best possible outcomes for their patients." Having the larger Sharp monitors helps that happen.

By marrying the moving magnet technology with the clarity and precision of the Sharp LCD image, the IMRISneuro system might well become the standard of care in operating rooms all over the world and help to bring positive answers to questions we often fear to ask.

