

GE Healthcare

# OR Time Study Optical Navigation System vs. OEC FluoroTrak<sup>®</sup> 9800 Plus Spinal Fusion



The evolution of less invasive surgical options continues in modern healthcare. Operating in a smaller field results in smaller incisions and causes less damage to surrounding tissues, aiding the patient in post-surgical recovery. However, along with the development of these new types of surgeries, there has been an increased need for the surgeon to visualize both the anatomy as well as the surgical instruments while the patient is on the operating table.

A recent time study comparing optical navigation systems to GE Healthcare's OEC FluoroTrak® 9800 Plus surgical navigation system was recently conducted at St. Luke's Medical Center in Milwaukee, Wis. St. Luke's is a 750-bed not-for-profit, tertiary care hospital, and is part of the Aurora Health Care system. The results of the study included a number of surgical benefits: Better accuracy, enhanced ease-of-use and, most interesting, an average of 37 minutes times savings per procedure when the FluoroTrak 9800 Plus was used instead of the optical system.



**Arvind Ahuja, M.D.**

Chairman, Section of Neurosurgery  
Co-Director, St. Luke's Medical Center Gamma  
Knife Center  
Director of Neuroendovascular Services,  
St. Luke's Medical Center

Dr. Ahuja received his medical degree from the Medical College of Ohio. Upon graduation, he completed his residency in neurosurgery at the State University of New York in Buffalo. He has completed additional training in endovascular therapy and neuroradiology at Millard Fillmore Hospital in Buffalo, the University of Wisconsin Hospitals and Oregon Health Sciences University. Dr. Ahuja is board certified by the American Association of Neurological Surgeons.

### **Average Time Savings of 37 Minutes**

The study analyzed a series of 60 spinal fusion cases across several months. There were 30 cases conducted on the optical system and 30 additional cases studied on the FluoroTrak 9800 Plus system. It was organized and directed by Erin Whittle, RN, Neurosurgery Coordinator at the facility. In an average week, the hospital usually averages 12 spinal fusion procedures. According to Whittle, an average of 37 minutes was saved during the procedures that used the FluoroTrak 9800 Plus for surgical navigation.

According to Whittle, the major element contributing to the time savings was the positioning ease of the FluoroTrak 9800 Plus. "With the optical system, surgical technicians had to climb up on stools to position the camera at the beginning of a procedure," she says. "During the procedure, the OR team had to step out of the way when moving the camera. The FluoroTrak has eliminated that time-consuming step." She adds that the resolution of the images is better than or equal to the optical system.

### **Ease of Use**

The performance within the operating room has been positive for the entire team. Surgical Services Staff Nurse Dawn Sankey, RN, says the system has been especially effective in the placement of pedicle screws. Either the optical system or GE's FluoroTrak 9800 Plus navigation system were attached to the patient during the procedure. For spinal fusion procedures, a bone clamp with a transmitter is attached to the spinus process.

"The location of the optical system's camera had to be 'just right' to see the navigation equipment on the patient. Now, we're able to position the navigation equipment on the patient, plug in the cord attached to the transmitter and simply take the picture with the radiology equipment. The images are available immediately on the OR monitor." She adds that locating the navigation equipment took a long time with the optical system and that the FluoroTrak 9800 Plus navigation equipment is easy to handle and locates images in a fraction of the time.

Sankey says that the system is easy to operate. “The FluoroTrak 9800 Plus system quickly acknowledges the navigation equipment and prompts you as you go along,” she says. “It has a series of green bars on the screen that prompts the user to go ahead. If you’re not in the correct position for taking an image, red bars appear. When that happens, I can quickly help re-position the radiology equipment and take the image.”

### **Surgical Benefits**

Neurosurgeon Dr. Arvind Ahuja, M.D., uses the FluoroTrak 9800 Plus for a number of procedures at St. Luke’s. He is one of few surgeons in this country that is board certified as a neurosurgeon and trained as a neuroendovascular specialist. Dr. Ahuja is currently the Chairman of the Section of Neurosurgery and Director of Neuroendovascular Services at St. Luke’s Medical Center.

Dr. Ahuja uses the FluoroTrak 9800 Plus for spinal procedures and the InstaTrak 3500 for cranial procedures at St. Luke’s Medical Center. He found the microscope that was part of the optical system difficult to work with in the operating room. “The size of optical systems is a big issue with me,” says Dr. Ahuja. “It’s a big instrument with big screens and it always seemed to get in the way. The GE system is much smaller in size. At the same time, it was frustrating to have to take the time to reposition the optical system every time somebody bumped into it.” He notes that the biggest time saving aspect of the GE system is the elimination of waiting for the system to re-register the image.

However, within a surgical procedure, speed is not always the most important factor. Precision is critical and the system images of the patient must be accurate to achieve the best outcome.

### **Better Accuracy**

Dr. Ahuja finds that the images from the FluoroTrak 9800 Plus help him to perform surgeries safely and accurately. “The system helps me correlate visual findings with the image on the screen,” says Dr. Ahuja. “I have a better field of vision for critical surgeries such as tumor resections or placement of pedicle screws in lumbar fusions.”

He also finds that the FluoroTrak 9800 Plus is helpful when operating on patients with anatomical variations because of the precise images on the monitor. “Overall, I find the FluoroTrak 9800 Plus easier to use, more convenient and more precise,” says Dr. Ahuja.

The doctor says that there is a substantial benefit for the patient with this system. “When I can save time during a procedure, it results in less anesthesia time and a better outcome for the patient. Saving time is important for me, too. It allows me to do more – see more patients and spend my time as a physician.”

For more information on spinal applications of the FluoroTrak 9800 Plus surgical navigation system, contact 801-517-6435.

### **Profile**

- Aurora St. Luke’s Medical Center is a not-for-profit, 750-bed tertiary care hospital serving the residents of southeastern Wisconsin.
- St. Luke’s has a national reputation for excellence for a number of different healthcare specialties, including spinal procedures.

### **Project**

Working with a number of key surgeons, Erin Whittle, RN, Neurosurgery Coordinator at St. Luke’s, conducted a time study comparing the use of an optical navigation system vs. GE Healthcare’s FluoroTrak 9800 Plus surgical navigation system in the operating room. The study analyzed a series of 60 spinal fusion cases across several months. There were 30 cases conducted on the optical system and 30 additional cases studied on the FluoroTrak 9800 Plus system.

### **Key Findings**

- Smaller footprint of GE system provides more room and easier patient accessibility in OR
- Faster and easier set-up by not having to reposition an optical camera saves time during procedures
- Improved field of vision for critical surgeries
- Average time savings per procedure was 37 minutes

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