

Turville Bay MRI and Radiation Oncology Center

Improving Results for Large and Claustrophobic Patients

A DIAGNOSTIC IMAGING CENTER CASE STUDY



Background

Turville Bay MRI and Radiation Oncology Center
Madison, WI

Challenge

Improving results for obese and claustrophobic patients

Solution

MAGNETOM Espree™ with Total imaging matrix™ (Tim) technology

Proven Outcome

Increased workflow, image quality, and patient comfort

It's a significant problem that is becoming more critical for imaging centers every day. Large and claustrophobic patients pose a special set of challenges in the MRI suite, with implications for imaging efficiency, profitability, and standard of care.

Turville Bay MRI and Radiation Oncology Center in Madison, Wisconsin knows this all too well. "More than 15 percent of our patients are either large or claustrophobic or both, and the problems seem to be escalating," comments Phyllis Nelson, Turville Bay's executive director. She notes that the two issues go hand in hand because large patients often feel particularly confined in the small MRI bore.

For Turville Bay, the result has been an unhappy compromise in image quality and patient care, while workflow and profitability suffer due to missed appointments, scheduling difficulties, long exam prep times, and aborted procedures.

"Basically, we're struggling with a trade-off. These patients are either imaged in our 0.3T low-field open MRI with lower image quality or in a closed MRI two percent of the time under sedation — which brings its own set of problems. We have been living with this for a long time, waiting for a solution," says Patricia Ethridge, technical director for the center.

Now Turville Bay has found a revolutionary way to address the unique needs of this underserved and growing percentage of the population in the unique new Siemens MAGNETOM Espree™ MRI scanner. With a high-field



Phyllis Nelson
Executive Director
Turville Bay MRI and
Radiation Oncology Center

1.5T magnet and innovative open-bore design, the MAGNETOM Espree eliminates the need to compromise between patient comfort and image quality that plagues most imaging centers. “We feel the scanner will help us realize major clinical gains,” says Nelson, noting that the patient benefits will be matched by financial and workflow gains.

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*Phyllis Nelson, Executive Director
Turville Bay MRI and Radiation Oncology Center*

Traditional MRIs Proved Problematic for Larger and Claustrophobic Patients

To accommodate their largest patients, Turville Bay had been using an open scanner with lower image quality-field strength as well as a closed traditional 1.5T scanner that in many cases required patient sedation.

The center’s radiologists had grown increasingly dissatisfied with the image quality of the existing open MRI, particularly when compared with the quality offered by Siemens 1.5T closed MAGNETOM Symphony MRI. The practice’s ability to image larger patients in particular suffered because scans required a stronger magnet yielding a higher signal-to-noise ratio.

To many Turville Bay staff, sedation was an equally unsatisfactory choice. In addition to its inherent risks, anesthesia prolongs the imaging process with significant time added for sedatives to take effect and wear off. Sedation also requires a board-certified anesthesiologist onsite. But despite this, many Turville Bay radiologists believed the 1.5T image quality was worth the risk and the wait.

“As a not-for-profit facility, we want the best for all our patients. But, clearly neither scenario has been the preferred option,” said Nelson.

Existing Open MRI Under-utilized

With radiologists preferring sedation and the closed 1.5T system, the open MRI has been severely under-utilized, placing greater demands on the closed scanners. Increased procedure time for sedation was dramatically slowing throughput, forcing dedicated Turville Bay staff to work longer hours and patients to wait weeks for appointments.

"It's frustrating to try to load up schedules to the max on our other MRI systems and then have the open MRI sitting empty. We knew we needed a better solution," Ethridge said. Essentially, Turville Bay had been waiting for Siemens MAGNETOM Espree for years. It simply hadn't been invented.

MAGNETOM Espree Delivers Major Clinical Benefits

"When we saw MAGNETOM Espree, we were convinced it was the answer," Nelson said. Ushering MRI into a new age of advanced performance and patient comfort,

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*Phyllis Nelson, Executive Director
Turville Bay MRI and Radiation Oncology Center*

MAGNETOM Espree maximizes open space with a CT-like design while delivering the state-of-the-art capabilities of a 1.5T magnet. Patients enter the 4-foot-long MAGNETOM Espree bore feet-first, yielding a far more comfortable experience than head-first imaging. Most important, with an unparalleled 70-centimeter bore, MAGNETOM Espree can easily accommodate larger patients.

"We were also pleased to find that MAGNETOM Espree enables completion of more than 60 percent of exams with the patient's head outside the magnet, eliminating the closed-in feeling," said Ethridge. With an inside diameter of more than two feet, even within the bore, patients have almost a foot of clearance.



Patricia Ethridge
Technical Director
Turville Bay MRI and
Radiation Oncology Center

“MAGNETOM Espree will make high-quality imaging a reality for most of our largest patients and enable a new level of comfort for more patients,” said Ethridge.

The new technology delivers up to four times the signal-to-noise ratio of a traditional open MRI, greatly improving images of larger patients compared with traditional open systems. With MAGNETOM Espree delivering a high image quality similar to the Siemens 1.5T MAGNETOM Symphony MRI, Ethridge and Nelson believe radiologists will rarely opt for sedation and closed imaging.

At the same time, MAGNETOM Espree also delivers a more satisfactory scanning experience with revolutionary new Total imaging

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matrix™ technology (Tim) and Integrated Panoramic Array (IPA) technologies, which virtually eliminate the need for coil reconfiguration and patient repositioning during the exam.

Tim enables seamless whole-body scanning of up to 6'9" by bringing together 76 seamlessly integrated matrix array coil elements and up to 32 channels that can be recombined based on user needs. IPA is an innovative integrated coil concept that allows simultaneous scanning with up to four coils for imaging of smaller areas.

Also selected because it supports a range of advanced new clinical applications, MAGNETOM Espree will enable Turville Bay to deliver such procedures as vascular and contrast-enhanced angiography.

At Turville Bay, MAGNETOM Espree's Phoenix protocol exchange technology will ensure superior reproduction of all studies. Phoenix enables users simply to drag and drop an existing image from the workstation browser into the patient list without duplicate input of processing parameters. Similarly, its automatic slice positioning ensures uniform exam results.

Not surprisingly, Turville Bay believes that, once installed, the MAGNETOM Espree will become an imaging workhorse, constantly churning out a high volume of top-quality images while improving patient care.

Niche Marketing and Technological Innovations Fuel New Revenue Potential

“The MAGNETOM Espree purchase was also a sound financial decision that will lead us down a pathway to greater profits,” said Ethridge, pointing out that they expect their streamlined and comfortable MRI procedures to attract a greater pool of large and claustrophobic patients.

“Additionally, we have always lost a certain percentage of patients who were so fearful of the closed MRI process that they simply never came back,” she said. “MAGNETOM Espree will help us hold on to those revenues.”

With the fear factor eliminated, Turville Bay expects exam scheduling and throughput to increase as missed appointments, aborted scans, and use of sedation to diminish. The MAGNETOM Espree’s fast imaging speed and productivity-building features will enable Turville Bay to handle more patients per day, again increasing revenues.

“In particular, MAGNETOM Espree will enhance our current throughput on lumbar spine exam by 50 percent,” Ethridge said. New advanced exams

will also generate an increased patient population and greater revenues.

New Workflow Efficiencies

“Naturally, fully utilizing an additional scanner will help alleviate our current workflow problems and enable more efficient use of staff time,” said Ethridge, adding that MAGNETOM Espree’s comprehensive productivity features also will support this.

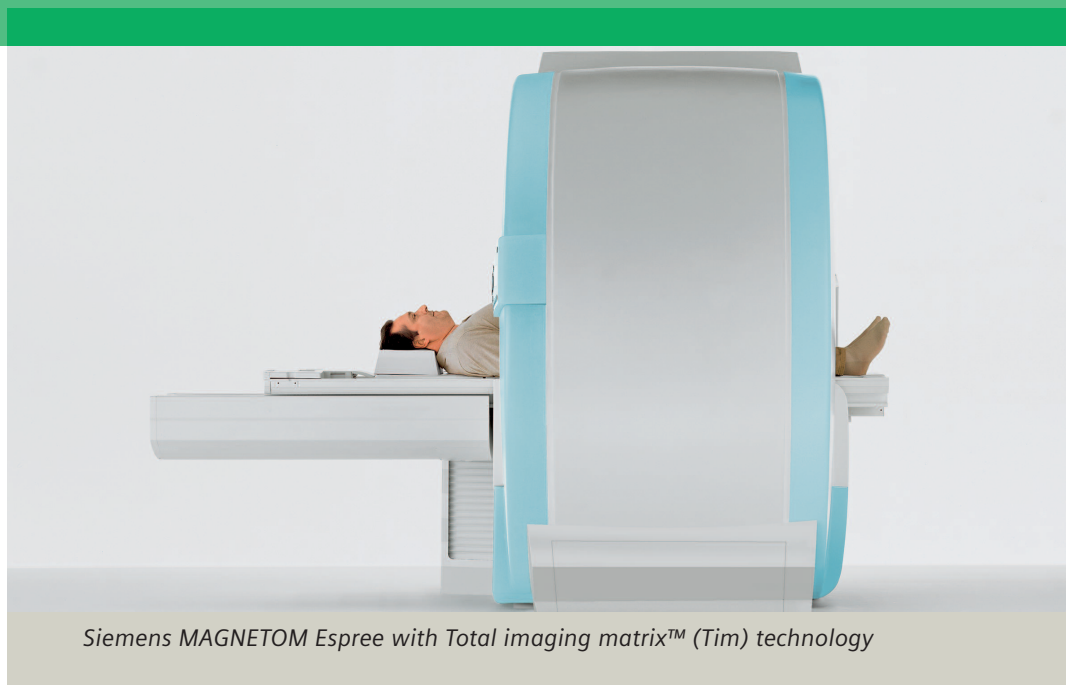
In particular, both cutting-edge Tim and IP technologies dramatically boost productivity while also improving patient care. IPA alone can cut exam time by up to 20 percent.

Similarly, Phoenix protocol exchange technology offers significant new efficiencies by eliminating time-consuming patient exam data re-entry. Exam protocols can even be transferred from images sent by e-mail or on CDs.



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Siemens MAGNETOM Espree with Total imaging matrix™ (Tim) technology

“This will be extremely valuable with our staff that constantly moves from site to site. In addition, the Siemens easy-to-use *syngo*® common user interface can now be shared across MRI equipment,” Nelson said.

Turville Bay hopes the new technology will pare down weekend hours. To a large extent, however, dedicated radiology professionals plan to channel MAGNETOM Espree’s new efficiencies toward improved patient care. They hope to cut down scheduling delays, spend more time with patients, and enhance their clinical skills to deliver cutting-edge procedures.

The new Siemens MAGNETOM Espree will be up and running by early November 2004. Turville Bay plans to promote it to the surrounding community to generate awareness. “People need to understand that this is not your traditional open or closed MRI,” says Nelson, adding that MAGNETOM Espree is something really new that delivers efficient, high-quality patient care with no compromise — just like Turville Bay’s dedicated clinical staff.

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