

CASE STUDY:

St. Luke Community Hospital

Suite of Toshiba Imaging Systems Improves Patient Care and Workflow Efficiency at St. Luke Community Hospital

SITUATION:

St. Luke Community Hospital, a 25-bed facility in Ronan, Mont., serves a population of more than 25,000. Although the community it serves is small, the hospital has a high intake of trauma patients due to frequent accidents on a busy two-lane highway that runs near the town. During the planning stages of the hospital's 66,000-square-foot expansion, the staff wanted to upgrade its current imaging systems. The new systems must meet the requirement of supporting the rapid intake and imaging of trauma patients, prior to transporting them to a larger facility for treatment, while also serving the needs of the general patient community.

SOLUTION:

After visiting the Radiological Society of North America annual meeting, the world's largest radiology trade show, St. Luke Community Hospital purchased three

advanced imaging systems from Toshiba America Medical Systems — the RADREX™-i X-ray system, the Kalare™ X-ray system and the Aquilion® 64 CT scanner. Using this suite of advanced Toshiba imaging technology, St. Luke can now improve patient care for both emergency and community patients, regardless of the type of patient or severity of condition.

RESULTS TO DATE:

- By using a suite of Toshiba imaging systems, St. Luke is able to quickly and accurately diagnose a patient, no matter the condition.
- The RADREX-i X-ray automates features to increase workflow, a critical element when evaluating trauma patients. The RADREX-i's flexible design supports a variety of imaging needs without sacrificing patient safety or comfort.
- Toshiba's Kalare X-ray system offers versatility to perform multiple types of exams, an important feature in an emergency-room setting.

- The Aquilion 64 CT scanner offers enhanced coverage and excellent image quality, helping St. Luke evaluate patients quickly, providing better diagnostic confidence.



St. Luke Community Hospital is a 25-bed hospital serving more than 25,000 residents from Ronan, Mont., and surrounding communities, including the Flathead Reservation.



As a small hospital facing challenging demands daily, St. Luke Community Hospital was undergoing a 66,000-square-foot expansion and required new diagnostic imaging equipment to serve its high-volume emergency department and community hospital patients. The 25-bed hospital serves more than 25,000 residents from Ronan, Mont., and surrounding communities, including the Flathead Reservation. Accidents on a nearby two-lane highway create an influx of trauma patients, making St. Luke's services vital. Frequently, St. Luke's trauma patients are airlifted to larger hospitals for specialized treatment or surgery, so St. Luke is tasked with performing diagnostic exams and sending

the images to the larger hospital ahead of the patient's arrival, helping streamline and reduce diagnosis time. To best serve these needs, St. Luke required flexible imaging equipment to perform a variety of exams while producing high-quality, reliable images quickly.

Challenge

St. Luke Community Hospital's existing X-ray and CT diagnostic imaging technology wasn't meeting the facility's needs. During the planning stages of its 66,000-square-foot expansion, the hospital challenged itself to upgrade its current imaging systems. The new systems must meet the requirement of supporting the rapid intake and imaging of trauma patients while also serving the needs of the general patient community.

When treating trauma patients, St. Luke often airlifts patients to larger facilities for advanced treatment and surgery. St. Luke needed imaging equipment to quickly examine patients and send high-quality diagnostic images to the larger facilities, so medical personnel could assess the patient's condition before he

or she arrived. Oftentimes, St. Luke patients had to be rescanned after arriving at the larger facility because the images sent by St. Luke did not meet the needs of the next group of physicians. Rescanning the patient adds time, a disadvantage in emergency situations. Acquiring new, high-quality imaging equipment would help St. Luke Community Hospital quickly and accurately image trauma patients, as well as serve the general imaging needs of the community.

Finding the Right Equipment

Leading the search for new imaging equipment was Steve Sivak, radiology manager, St. Luke Community Hospital. His criteria for selecting imaging systems included the ability to provide quick, accurate images while being flexible enough to perform a variety of exams. "The addition of the new facility gave us the opportunity to upgrade our outdated systems and provide the best care for our trauma patients and community," said Sivak. "With more than 25,000 residents in our area, with a variety of needs, acquiring the best possible equipment was critical."

Sivak traveled to the country's largest radiology symposium, the Radiological Society of North America's (RSNA's) annual meeting, to research and survey the variety of imaging technology available. While at RSNA, he looked at all the vendors' systems to determine which would provide the speed, accuracy and flexibility the hospital needed.



St. Luke Community Hospital uses Toshiba's RADREX-i X-ray in trauma situations to image patients safely while reducing exam time.

RexView is extremely helpful in trauma situations and reduces exam time by allowing us to view and assess X-rays on the spot. When every second counts, RexView helps us triage the patient quickly and efficiently, increasing their chances for a better outcome.

— Steve Sivak,
radiology manager,
St. Luke Community Hospital

After completing the extensive search, St. Luke Community Hospital purchased a Toshiba America Medical Systems RADREX™-i Digital Radiographic System, a Kalare™ R&F system and an Aquilion® 64 CT scanner.

Toshiba's RADREX-i Digital Radiographic System

"We never know what we'll be faced with in an emergency setting, and Toshiba's RADREX-i X-ray system provides us flexibility to image a wide range of patient types and conditions, making it imperative to being able to efficiently triage trauma patients," said Sivak.

The comprehensive RADREX-i features a 600-pound table-weight limit, a 600 kHU X-ray tube and an 80-kilowatt generator, making it bariatric friendly and cost-effective for hospitals, like St. Luke Community Hospital, to image a variety of patients. The X-ray system enhances workflow and improves patient care with the RexView, a color LCD screen located on the overhead tube crane (OTC). This feature allows access to generator functions at point of care.

Since the image appears on the OTC, the technologist does not have to wait in the control room to check images on the control room monitor. Instead, right after the exposure, the technologist can immediately go back into the room with the patient and make a decision to accept or reject the image at point of care.

"RexView is extremely helpful in trauma situations and reduces exam time by allowing us to view and assess X-rays on the spot," added Sivak. "When every second counts, RexView helps us triage the patient quickly and efficiently, increasing their chances for a better outcome."

Additionally, the automated features of the RADREX-i save time in a crisis by supporting technologists' selection of the right exam and

quick positioning of the X-ray system. These automated features include:

- Auto-tracking eliminates the need to manually position the X-ray tube detector by providing synchronization for table and wall-stand tracking
- Auto-collimation saves crucial time for the patient and technologist by automatically selecting the correct collimation size for the patient's body part
- Auto-program eliminates the need for the technologist to manually select the program on the generator by automatically selecting the correct program
- Auto-center stop provides visual guidance for fast, simple detector centering

"When treating a significant amount of trauma patients, acting quickly is critical," explained Sivak. "For some patients, 20 minutes is the difference between recovery or permanent disability. Equipment like the RADREX-i has many automated features to help streamline workflow and accelerate throughput. This is a tremendous benefit to patients when time is of the essence."

Kalare X-ray System

To complement the RADREX-i X-ray system, St. Luke Community Hospital purchased the Kalare R&F system, which combines superior user interface and all-digital imaging. As a single system that can perform both traditional X-ray and fluoroscopic exams, the Kalare is occasionally used for additional X-ray support, a benefit for handling a high volume of trauma intake.

"We purchased the Kalare to accompany the RADREX-i because of the versatility it provides," explained Sivak. "In a trauma situation with multiple patients in need of X-rays, we can now use both the RADREX-i and the Kalare simultaneously without sacrificing care or quality for either patient."

For example, St. Luke can perform a traditional bone X-ray and an upper GI for a bleed on the same system, eliminating the need to move and reposition the patient. Kalare creates new standards for improving image quality, staff productivity and patient care — making it simple for physicians to review high-quality images and diagnose patients quickly. Beyond trauma patients, Kalare's versatility helps St. Luke serve the community patient population when in need of fluoroscopic exams.

The Aquilion 64 CT Scanner

In addition to purchasing the RADREX-i and Kalare X-ray systems, St. Luke purchased an Aquilion 64 CT scanner for its trauma patients. Toshiba's Aquilion 64 CT system utilizes 64 detector rows (0.5 mm in width) to quickly capture detailed anatomical images of

entire organs, like the heart or brain, or larger anatomical regions, like the stomach, liver or GI region. Including a CT scanner in its product mix allows St. Luke to offer patients comprehensive head-to-toe imaging when more than an X-ray is required.

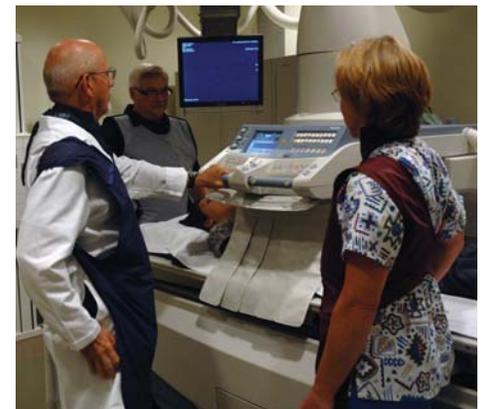
"Acquiring the Aquilion CT gives us an even further advantage when imaging trauma patients, because it can capture detailed images quickly," says Sivak. "We are also beginning to use the system's capabilities beyond trauma imaging and have developed a coronary CTA program to diagnose and treat coronary disease. We have three exceptional radiologists and cardiologists leading this program, which will greatly benefit our community."

Using the Aquilion 64, St. Luke has already imaged 100 patients for the coronary CTA program.

Using Diagnostic Imaging to Save Lives

For St. Luke Community Hospital, finding the right equipment was critical to improving patient care offered to the surrounding community. After purchasing three systems from Toshiba, the 25-bed hospital now offers some of the most advanced diagnostic imaging capabilities in the region. To avoid the need to rescan trauma patients en route to larger facilities, St. Luke required equipment that matched or exceeded the quality of the systems at the next facility where patients would be treated. Now that St. Luke has purchased this equipment from Toshiba, larger facilities in the area no longer reimage St. Luke patients, saving valuable time in trauma situations.

"Our new Toshiba imaging systems support what is at the heart of our hospital — providing excellent care to patients, no matter the type of patient or severity of condition," said Steve Todd, chief operating officer, St. Luke Community Hospital. "Although we remain a small hospital, we now have diagnostic capabilities that surpass those of some larger facilities, which provides a tremendous benefit to every patient."



Toshiba's Kalare R&F X-ray system provides St. Luke Community Hospital with versatility to image a variety of patients, both trauma and general population.



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