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Trending toward Transparency

How the SOMATOM® Definition Edge is helping Mary Lanning Healthcare answer the challenges of patient safety and patient satisfaction and position for future growth.



Answers for life.

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Mary Lanning
HEALTHCARE

“You can’t stay status quo in healthcare, you have to continue to improve patient satisfaction and patient safety, and we have made an investment in imaging technology that shows everyone in this area that we deliver what we say.”

Mark Callahan, COO
Mary Lanning Healthcare

With more choices available to patients about where they want to receive care, focusing on safety and satisfaction will help providers stand apart from the competition. Successful organizations will find a way to establish effective processes and deliver the right technology to gain a competitive edge when it comes to key outcomes like patient safety and patient satisfaction.

Recently, Mary Lanning Healthcare, a 183-bed facility in Hastings, Nebraska, upgraded an eight-year-old computed tomography (CT) system with a new, 128-slice SOMATOM® Definition Edge. With an increasing trend toward transparency in hospital outcome measures, and maybe even public radiation dose reporting one day, the purchase was made to enhance the patient experience and position the hospital at the forefront of diagnostic imaging.





The SOMATOM Definition Edge is Siemens' most advanced single-source CT scanner.

At Mary Lanning Healthcare, the SOMATOM Definition Edge is delivering high-quality images that are improving clinical confidence, helping the organization maintain stellar performance on key outcome measures like keeping the length of stay below the national average, improving the ED triage process, and reducing the risk of readmissions.

"CT technology like the SOMATOM Definition Edge is very helpful for sorting out who needs to stay in the ED and who can be discharged," said Daniel Herold, MD, a radiologist at Mary Lanning Healthcare. "With good quality images, unnecessary admissions can be avoided."

Safe for patients, safe for the bottom line.

In 2014, radiation dose once again emerged as a national topic with the establishment of the NEMA XR-29 Smart Dose Standard (XR-29). The standard affects CT scanners being used to image Medicare patients. To summarize what is required, these

scanners must include pediatric protocols, DICOM-structured reporting, Dose Check, and automated exposure control. These tools help ensure a safer procedure. Starting in 2016, there will be a 5% reduction of Medicare reimbursements for imaging procedures using non-compliant technology. In 2017 and beyond, the penalty will increase to 15%.

At most U.S. hospitals, Medicare is one of the single biggest payors. The situation created by XR-29 could have become even more acute for Mary Lanning Healthcare, where Medicare accounts for 53% of the hospital's payor mix. Moving to XR-29 compliant technology should be about more than protecting Medicare reimbursement. It creates an opportunity to do more than just replace outdated technology with new scanners that have the base level of compliant technology. It represents a chance to bring in advanced diagnostic functionality that positions the organization to become a regional leader.

"It wasn't our intent to replace the CT with a premium 128-slice unit, but when we saw what was available in terms of pricing, radiation dose, and additional clinical capabilities, it made sense to go with the SOMATOM Definition Edge. When our Director of Imaging first approached me about the system, she got my attention right away when she said it could help reduce exam time and radiation exposure."

Mark Callahan, COO
Mary Lanning Healthcare

According to the American Hospital Association, Medicare patients present with a growing prevalence of chronic conditions and risk factors, such as obesity. This, in turn, can lead to a rise in Medicare beneficiaries' use of healthcare, which has implications for resource utilization and payment.¹ With its high table weight limit and ability to support fast, high-quality exams and higher patient volumes,

the SOMATOM Definition Edge can help Mary Lanning Healthcare offset some of the concerns associated with having such a high Medicare case mix. The SOMATOM Definition Edge helps Mary Lanning Healthcare better meet the needs of the aging population while putting the hospital in a position to attract younger patients in the community.

“Our patient population is generally older. Many of our older patients have a hard time holding their breath. Now, with the SOMATOM Definition Edge, the scan is so fast that they hardly have to hold their breath at all. I think saving those couple of seconds helps a lot. In fact, some of the hospital’s patients, who also had scans on the previous CT system, have commented that the exam on the SOMATOM Definition Edge is faster.”

Jenny Utecht, CT Technologist
Mary Lanning Healthcare

The SOMATOM Definition Edge helps Mary Lanning Healthcare better meet the needs of the aging population.



¹Are Medicare Patients Getting Sicker? Washington: American Hospital Association. 2012 Dec [cited 2014 July 11]. Available from: <http://www.aha.org/research/reports/tw/12dec-tw-ptacuity.pdf>.



Dose reduction as a differentiator.

“Low dose, faster CT imaging further supports improved patient safety and satisfaction, which are two key focal points for the Mary Lanning Healthcare organization. Outside of image quality, patient safety comes first.”

Tami Lipker, Director of Imaging
Mary Lanning Healthcare

The SOMATOM Definition Edge is already helping Mary Lanning Healthcare lower the radiation dose compared to its previous CT scanner.

The NEMA XR-29 Smart Dose Standard established a baseline for CT technology and specifically includes functionality for reporting of radiation dose levels. With trends toward greater transparency in other hospital outcomes, it is reasonable to think that in the near future the average dose for a hospital’s top CT procedures might be public information. If that becomes the case, investments in dose-optimized CT technology could play a significant role in a healthcare organization’s reputation.

“Dose was probably the number one item we were looking at as we negotiated for a new CT scanner,” said Mark Callahan, COO, Mary Lanning Healthcare. “I also think dose values could certainly be a market differentiator for hospitals like ours.”

The SOMATOM Definition Edge is already helping Mary Lanning Healthcare lower the radiation dose compared to its previous CT scanner. “We compared average dose from our old scanner with the average dose from the SOMATOM Definition Edge,” said Jenny Utecht, CT technologist, Mary Lanning Healthcare. “After adjusting for patient size, using SAFIRE* we see overall dose reductions from 45% to greater than 50% in procedures such as chest imaging, abdomen/pelvis, and chest

pulmonary embolism studies. With chest pain and shortness of breath representing two of the most common reasons people present to the ED, the SOMATOM Definition Edge is helping us consistently provide safer imaging to patients.”

Potential for expanded services.

Mary Lanning Healthcare’s leadership sees these dose reductions as a testament to the value it places on patient safety. The ability to dramatically lower the dose may also open up the potential to increase pediatric imaging at Mary Lanning Healthcare, which means expanding services for the benefit of the community and the hospital. Pediatrics is one of several potential growth areas for expanded CT capabilities at Mary Lanning Healthcare.

Mary Lanning Healthcare will also use the SOMATOM Definition Edge to expand services in cardiology and interventional imaging. “For physician and patient satisfaction, the SOMATOM Definition Edge can have a huge impact, especially for cardiologists,” said Tami Lipker, director of imaging, Mary Lanning Healthcare. “The cardiologists have spoken to me personally about radiation dose reduction. It is a huge safety and patient satisfaction issue.”

*In clinical practice, the use of SAFIRE may reduce CT patient dose on the clinical task, patient size, anatomical location, and clinical practice. A consultation with a radiologist and a physicist should be made to determine the appropriate dose to obtain diagnostic image quality for the particular clinical task. The following test method was used to determine a 54 to 60 percent dose reduction when using the SAFIRE reconstruction software: Noise, CT numbers, homogeneity, low-contrast resolution, and high-contrast resolution were assessed in a Gammex 438 phantom. Low-dose data reconstructed with SAFIRE showed the same image quality compared to full-dose data based on this test. Data on file.

Physician perception is equally as important as patient perception, especially when trying to recruit the best available talent. So the SOMATOM Definition Edge has become an important part of the organization's physician recruitment efforts. Many of the hospital's prospective physicians come from academic medical centers and they are accustomed to practicing medicine with premium diagnostic tools at their disposal. They tend to want to continue practicing in an environment that lets them work with a similar level of diagnostic confidence. That's why the SOMATOM Definition Edge is one of the first pieces of equipment that prospective hires see.

Changing vendors, easier than anticipated.

As with any change in CT vendors, technologists at Mary Lanning Healthcare had some concerns. The SOMATOM Definition Edge uses Siemens FAST CARE [Fully Assisting Scanner Technologies and Combined

Applications to Reduce Exposure] to automate and standardize many of the exam preparation steps. The CARE applications are aimed at helping technologists consistently optimize exam protocols for each patient and study type. "Some of the technologists were worried about the change," said Utecht. "We thought imaging would be too automated, and we wouldn't be able to make adjustments. So, we were skeptical about the scanner at first."

Installation and applications training were successful and technologists now have a higher level of comfort with the SOMATOM Definition Edge as a result. "I actually told the applications people 'I hate to admit this, but I think I'm sold on the SOMATOM Definition Edge,'" Utecht said. "It's a great system. The installation team goes above and beyond and the applications people were a huge help. The SOMATOM Definition Edge has features that are really helpful when you're scanning patients. We're even able to get more people through in a day. We've been extremely busy."

Positioned for the future.

The SOMATOM Definition Edge is helping Mary Lanning Healthcare meet its short-term patient care objectives while positioning the hospital to continue to be a leader in the community for years to come.

"If we can reduce exposure to our patients, make their exams safer and the images better, then that's what it's all about. We're working to create the safest, most effective care for our patients."

Mark Callahan, COO
Mary Lanning Healthcare



The statements by Siemens' customers described herein are based on results that were achieved in the customer's unique setting. Since there is no "typical" hospital and many variables exist (e.g., hospital size, case mix, level of IT adoption) there can be no guarantee that other customers will achieve the same results.

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