



Healthcare network reduces costs and enhances workflow with standardization of ultrasound fleet

St. Luke's University Health Network achieves efficiency by using same vendor

Founded as a Moravian settlement in the 18th century and known since the industrial revolution as a center of heavy industry, Bethlehem, Pennsylvania, has undergone an economic and cultural renaissance in recent years – a renaissance that landed it on *Money* magazine's list several years ago of the nation's "Top 100 Best Places to Live."

St. Luke's University Health Network has been a major player in this transformation; it's the second largest employer in the region with six hospitals and more than 150 sites across the network. With over 55,300 admissions annually and nearly 193,000 Emergency Room visits, St. Luke's is nationally recognized for excellence in care delivery.

No healthcare institution is immune from the economic pressures of 21st century American healthcare. But St. Luke's is among those taking innovative steps to rein in costs without compromising quality – most notably, by standardizing its fleet of ultrasound equipment.



The right solutions, across the board

Under the direction of Radiology/Cardiology Manager Lindsey Solovey, BS, RDMS, St. Luke's has chosen GE for all its ultrasound needs, from emergency departments to operating rooms, and for applications ranging from ultrasound-guided pain-management injections to in-office OB/GYN imaging.

"I serve as St. Luke's subject-matter expert for ultrasound," says Solovey, who's in charge of all general-ultrasound, vascular and echo imaging for the Network's hospitals, each with its own cardiac, vascular and women's centers. "Whenever anyone in our organization needs ultrasound technologies, I help them understand their needs and point them to the best solutions."



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As a result of her efforts, the healthcare system has standardized all its ultrasound capabilities, with every department using GE Healthcare ultrasound systems exclusively.

The advantages add up

This strategy has produced important financial benefits for St. Luke's, in part by reducing their costs for both acquisition and servicing of this equipment.

In terms of acquisition, standardization has provided St. Luke's with obvious economies of scale. "Clearly, by buying a large number of systems from one vendor, we're enjoying some leverage on initial cost," Solovey points out.

Another cost advantage that has turned out to be significant is related to transducers.

"We are constantly sharing probes among departments and across sites – pulling one that's rarely used at one site, for instance, and driving it over to another site that really needs it, perhaps because its transducer is in for repair."

"Having the same equipment everywhere makes this sort of sharing very easy; plug it in and it's good to go. That means there's no need to invest in a full complement of probes for every ultrasound machine we own, no need to wait for a new probe to arrive, and no need to quit performing a particular study until we have the new probe in hand."

Not purchasing duplicate technologies has its cost advantages. Solovey estimates that this strategy – moving probes where needed or shifting a certain probe to a site with increased volume – saves them between \$30,000 and \$50,000 per year.

Substantial savings also have been realized in service costs, she says. For instance, the Network's team of in-house bio-medical engineers includes two who were specially trained on GE ultrasound. "We rarely need to call for GE service," Solovey says. "Our BMEs are phenomenal, and they're able to cover the entire fleet."

Savings on the training front

Equally important are the potential economies in training costs. Training is an important component of the quality and efficiency equation for an organization like St. Luke's, with roughly 60 sonographers on staff, and literally scores of physicians depending upon the quality and efficiency of their work.

In this environment, St. Luke's University Health Network places great emphasis on cross-utilization of human resources, with its technologists routinely rotating among applications and among facilities.

"I've started training our ultrasound techs to do both general ultrasound and vascular studies on the same system," Solovey says. "So far, we've successfully credentialed six RDMS techs as RVTs. As a result, we've been able to merge the ultrasound and vascular labs at our newest hospital, which has three techs certified to do both ultrasound and vascular imaging. We'll be making this change at our other sites, too."

She expects to see solid productivity improvements from this modification alone – and from the fact that while one tech is scanning the current patient, another can be building a report for a prior scan, even if one is a general ultrasound scan and the other is a vascular study.

The health system is also taking full advantages of its ability to share ultrasound techs across sites.

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Even though ultrasound is a very operator-dependent modality, Solovey's team does not experience problems with varying diagnostic results.

"We use standard protocols, and we don't allow radiologist-ordered variations. So the quality of our studies remains consistent from tech to tech, study to study, facility to facility."



Enhancing workflow

Thanks to tactics such as these, equipment standardization has provided St. Luke's with some welcome improvements in workflow.

"For one thing," Solovey says, "because we're able to send a tech to another site to cover for someone who can't get to work for whatever reason, that means we don't have to shut that site down and start rescheduling patients. We don't miss a beat."

She admits that one aspect of improving productivity hasn't quite worked out as planned.

"Our idea was to have our sonographers do our protocols with sweeps," says Solovey. "We thought they could complete their scans faster by sweeping organs instead of taking individual stills. But we are so quality-conscious at St. Luke's that, in the end, we haven't reduced scan time or the length of time the tech spends with the patient."

Nevertheless, the resulting scan quality has had another productivity-enhancing effect in terms of reducing rescans. "The difference is dramatic," she says. "It's now very rare that we need to bring a patient back for more imaging."

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It's this very focus on image quality that's driven so much confidence in their decision to standardize ultrasound technology with one vendor. A patient can go anywhere within the network and receive the same quality ultrasound. Sonographers rotate between sites and don't have to learn or re-learn a different machine because everything is the same: protocols, machines and processes.

Extraordinary bonus

According to Solovey, St. Luke's is also taking advantage of an innovative new ultrasound transducer-disinfection system known as the Trophon® EPR available from GE Healthcare. It's fast, easy to use, environmentally friendly and quality-assured for disinfection of the entire transducer, including shaft and handle, in just seven minutes. What's more, it eliminates exposure to potentially hazardous chemicals traditionally required for this task.

"When the Trophon unit came out, we were amazed," she says. "No more dangerous chemicals, venting or masking! It pretty much dummy-proofed probe cleaning for us across applications – not only with transvaginal transducers. We're now working towards replacing all our old probe-disinfection equipment and chemicals with this new system. It's going to be outstanding."

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When the cost of an eyewash station is added to the cost of the time a sonographer spends with aldehyde-based disinfecting solutions and the cleaning station, St. Luke's says it's definitely seen an economic benefit. They no longer have to maintain the competencies of non-sonographers, such as medical assistants, residents, and nurses in the ED, OB offices and clinics who do not routinely use these chemicals for transvaginal probe cleaning. "We estimate we'll see at least \$2,000 savings in training costs per year," Solovey says.



"We recently went through our three-year Joint Commission re-accreditation process. The surveyor saw the Trophon unit and was impressed with our willingness to try something new and 'green!'"

St. Luke's has identified the need for 24 Trophon units across the network and have purchased their first three. Even with so few units at this time, it's clear the cost savings will eventually enable them to purchase additional ones. Solovey reports they expect to realize a total network savings of over \$31,000 a year when comparing the almost \$65,000 cost for the chemicals they were using to an approximate \$33,000 annual cost for Trophon.

Ultrasound may just be the start

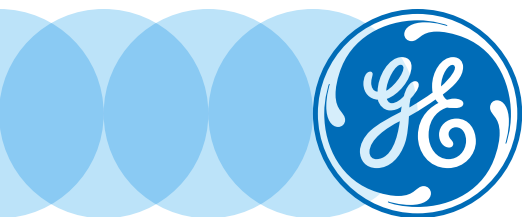
St. Luke's pioneering standardization strategy is in large part the brainchild of Hal Folander, M.D., Chief of Radiology and Senior Vice President of Clinical Integration. And for this healthcare system, ultrasound may be just the first step.

"When he assumed this position," Solovey explains, "Dr. Folander's charge was to remove all the silos that we see from radiology to cardiology, orthopedics to neurosciences. With healthcare reform, we can't have one service line doing its own thing anymore. Everyone has to be collaborative in the healthcare delivery system of the future. We need to work together to achieve the best possible outcome for every patient in our care."

Towards that end, St. Luke's ultimate goal is to standardize additional diagnostic technologies. And Solovey reports that GE Healthcare is helping the standardization team plan future transformations step-by-step.

"Whether it's an EKG machine, Holter monitor, ultrasound system, MRI or other imaging technology, whatever we need that GE offers, we'll be interested," says Solovey. "We've been delighted with everything – from the sales people and applications specialists we've worked with to equipment pricing, performance and ease of use."

"In short, by standardizing with GE Healthcare, it's delivering value for us."



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