

# LOGIQ™ Ultrasound: Operational case studies

**How fleet standardization and digitization may address your staffing, efficiency, and revenue challenges**






Most healthcare organizations are digitally transforming their ultrasound fleets to improve quality, efficiency, and workflow. Standardization is a key step on that journey.

No matter the size or geographical footprint of your organization, moving away from a mixed fleet toward greater standardization can offer multiple benefits in terms of care quality, efficiency, and economy.

One area with significant potential for operational gains is the ability to apply leading-edge digital technologies across your ultrasound fleet via enterprise solutions.

## Look at the numbers

Learn how healthcare organizations are uncovering staffing, efficiency and revenue opportunities with

-  Centralized device management
-  Automated patient set-up and scanning
-  Remote software updates
-  Structured reporting
-  Real-time peer-to-peer collaboration and training



### Centralized, digital device management

How much time could you save by managing your ultrasound fleet remotely from a central location? How much easier would it be to keep your devices standardized to the latest protocols?

## Challenge 1: Time lag in implementing clinical protocols across a large, multi-location fleet

**Situation:** The organization has 25 LOGIQ E10 systems across multiple sites. It takes the clinical ultrasound specialist weeks to visit all sites and manually implement new protocols. The chief radiologist would like the flexibility to issue protocol updates across the fleet at any time.

**Opportunity:** With centralized digital device management through Verisound™ Fleet, a manager can view, back up, and deploy LOGIQ E10 device configurations across the enterprise without leaving the building. Or even leaving their desk. They simply upload the new configuration to the Cloud and push an alert to the devices in the fleet to accept the changes.

It's as simple as that. Instead of spending hours traveling from site to site updating protocols, a fleetwide protocol update takes just a few minutes. With the potential for significant cost savings:<sup>1</sup>

	Manual protocol upgrades	Centralized, digital protocol upgrades
Installed systems	25	25
Update time per device	7 min	18 sec
Travel time to sites	7 hours (by car)	N/A
Protocol updates per year	24	24
Cost per year (\$75/hr employee)	\$17,856*	\$225**
Over 5 years	\$89,280	\$1125
<b>Estimated Cost savings</b>		<b>\$88,155</b>

Cost comparison of manual protocol upgrades vs centralized digital protocol upgrades. Information is provided for illustrative purposes only. Each institution's operational data is unique, and results may vary. Cost per year calculations: \*24 updates x \$75 x 9.92 hrs = \$17,856. \*\*24 updates x \$75 x .125 hr = \$225.



## Automated patient set-up and scanning

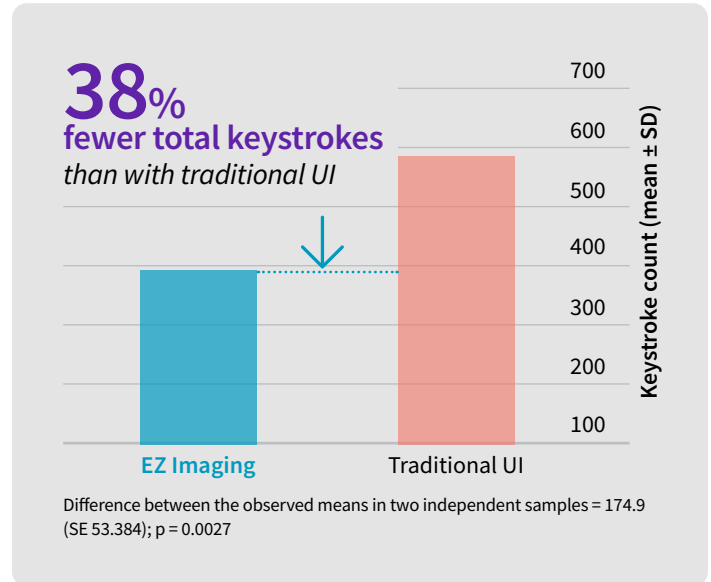
What would be the impact on staff health and satisfaction by reducing repetitive stress injuries caused by ultrasound scanning?  
Would exam efficiency improve by automating a greater portion of your ultrasound exams?

### Challenge 2: Sonographer burnout, staffing shortages

**Situation:** Research suggests that 60 to 80% of your sonographers may be suffering from work-related musculoskeletal disorders (WRMSD) that affect their physical and emotional well-being, job satisfaction, and long-term employment.<sup>2,3,4</sup> WRMSD challenges can add a significant financial burden to your organization.

**Opportunity:** EZ Imaging uses automation to help improve the ergonomics of patient set-up and scanning for sonographers. Its customizable probe pre-sets, simplified touch panel, and streamlined set-up reduce manual keystrokes by 38%, enabling sonographers to spend 32% less time per exam.<sup>5</sup>

In addition to its potential to help improve staff working conditions and reduce WRMSD risk, EZ Imaging may have a revenue impact, as seen in the following analysis of three of the most common types of ultrasound studies.<sup>1</sup>



<p><b>Work-related</b> Musculoskeletal pain leads to:<sup>4</sup></p> <ul style="list-style-type: none"> <li>42% Difficulty in performing work-related activities</li> <li>37% Difficulty in performing daily activities</li> <li>13% Missed work</li> <li>9% Considering changing employment</li> <li>5% Work restrictions</li> </ul>	➔	<p><b>Financial implications</b></p> <ul style="list-style-type: none"> <li>\$702,000 Lost revenue due to absenteeism</li> <li>+ 410,500 Staff replacement and retraining</li> <li>+ 29,000 Average cost for medical bills</li> <li>+ \$30,000 Worker's compensation costs</li> </ul> <hr/> <p><b>Total annual estimate: \$771,500<sup>5</sup></b></p>
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		Average exam time (mins)	# of Exams/ 90 days	Utilization (mins)/90 days	Improved efficiency (additional potential exams/90 days)	Average reimbursement	Increased revenue due to improved efficiency
ABD DETAIL	No EZ Imaging	37	2,500	92,500	1,200 <sup>*</sup>	\$85	\$102,000
	EZ Imaging	25	2,500	62,500			
GYN	No EZ Imaging	35	2,200	77,000	1,008 <sup>**</sup>	\$85	\$85,680
	EZ Imaging	24	2,200	52,800			
Abdomen	No EZ Imaging	44	1,000	44,000	467 <sup>***</sup>	\$85	\$39,695
	EZ Imaging	30	1,000	30,000			
Increase revenue due to improved efficiency/90days							\$227,375
Annual impact							\$909,500
5-year impact							\$4,547,500

**Increased revenue potential due to the efficiency of EZ Imaging.** Information is provided for illustrative purposes only. Each institution's operational data is unique, and results may vary. Potential additional exams (derived from time reduction per exam due to EZ Imaging) x \$85: \*1,200 x \$85 = \$102,000. \*\*1,008 x \$85 = \$85,680. \*\*\*467 x \$85 = \$39,695.



## Remote software updates

How certain are you that all ultrasound devices in your fleet are running with the same software versions and security patches?

### Challenge 3: Ultrasound devices running inconsistent versions of clinical and security software

**Situation:** When new software releases and security patches are issued, ultrasound/biomedical staff must manually manage those updates across the fleet, a time-consuming process that can lead to implementation delays. Software updates/patches are typically installed on ultrasound devices 3-7 times per year, with each installation taking 70–90 minutes per device.<sup>7</sup>

**Opportunity:** With remote service updates through eDelivery, software is delivered “direct to device” for immediate access to updates and security patches. At the touch of a button, all devices have secure access to new software, digital licenses, security updates, bug fixes, and associated items. The result? Fewer disruptions to patient care. Greater certainty that systems are secure and performing optimally. Less downtime at the point of care. No need for on-site maintenance visits.

#### Manual software updates: economic scenario

Installed systems	25
Number of on-device software updates/patches per year	3
Per device time for SW update/patch	70 minutes
Cost per year (\$75/hr employee)	\$6,525
Over 5 years	\$32,625

**Cost of manually installing software updates/patches.** Information is provided for illustrative purposes only. Each institution’s operational data is unique, and results may vary. Cost per year calculations: 3 updates x \$75 x 29 hrs = \$6525.



## Structured reporting

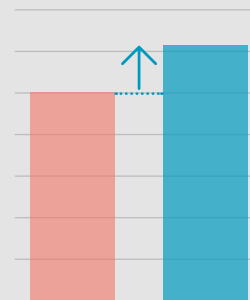
How are you managing staffing shortages and increasing workloads for your radiology staff? If you could enable radiologists to cut 8 hours of report dictation time down to less than 6.5 hours – and make it less tedious – would it help?

### Challenge 4: Radiologist work overload and burnout

**Situation:** Burnout among radiologists is increasing globally, with the prevalence estimated as high as 82%, according to a recent study.<sup>8</sup> Among the main contributing factors are heavier workloads, longer workdays, and requirements for faster report turnaround times.

**Opportunity:** Sophisticated digital technology can help reduce the reporting burden on overworked radiologists. ViewPoint™ 6 Structured Reporting with GE HealthCare LOGIQ ultrasound systems has been shown to significantly lessen the time that radiologists spend on dictation for two reasons: one, numerical values from the exam are automatically populated in the report, and two, standardized text is used throughout, reducing the need for the radiologist to reword sonographer observations.

ViewPoint 6’s easy-to-use exam documentation screen also helps sonographers reduce errors and save time. A study showed that sonographers using ViewPoint saved, on average, 4 minutes 42 seconds per exam<sup>9</sup> compared to completing worksheets by hand. For an average-sized radiology department, this could save 20 hours of sonographer time per week.



Radiologist dictation time  
**>20% faster  
with Viewpoint**

*Less time spent on voice dictation and double checking numerical values = more time spent interpreting images*

*“The biggest feedback I got from radiologists was that using ViewPoint was a delight. It’s a time saver, yes. But avoiding the tedium of dictating all those numbers ... that was the real satisfier.”*

– Ultrasound Radiology Section Chief for a non-profit, regional health network with 15 campuses and 300 sites.



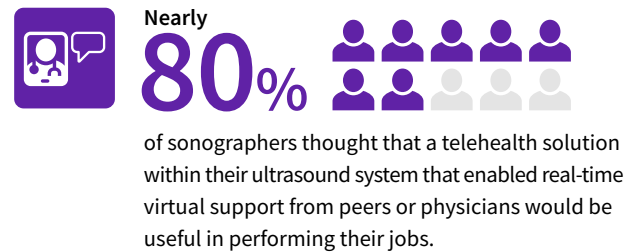
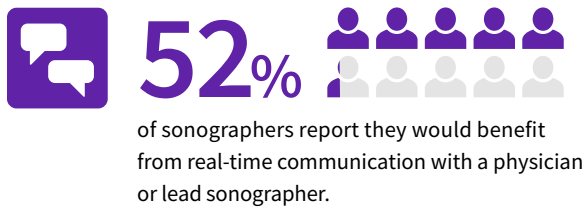
### Real-time peer-to-peer collaboration and training

What if your ultrasound superspecialists could “be” in multiple locations at once to guide less experienced sonographers or those faced with a tough case? How would real-time expert assistance help improve sonographer confidence, exam efficiency, and the quality of patient care?

## Challenge 5: Less experienced sonographers

**Situation:** The health network has a high ultrasound caseload across multiple locations. The radiology manager wants to reduce repeat exams and increase quality and consistency across all sonographers. The sonographer staff is spread thin: as in many institutions, less-experienced sonographers surpass the number of seasoned practitioners. More than half the staff see at least one complex exam each day.<sup>10</sup>

**Opportunity:** Digital Expert Connect enables real-time exam support from staff experts anytime, anywhere. Remote scan assistance with live support can help with image acquisition and prevent repeat scans while also serving as a teaching tool that can boost staff confidence and productivity. This collaboration tool can help radiology departments standardize care, reduce variations, save time, and make optimal use of staff resources.



**Sonographers want access to real-time peer collaboration.** In a survey of 150 U.S. based sonographers, 52-80% of respondents said that real-time collaboration with physicians, lead sonographers or peers would be beneficial.<sup>10</sup>

## Benefits across your enterprise

With LOGIQ ultrasound and the fleet-wide digital tools described above, healthcare organizations have the potential to significantly improve operations for all stakeholders across the enterprise, helping:

**Ultrasound specialists and managers** to reduce travel time and costs by implementing new ultrasound protocols and software fleetwide at the push of a button.

**Administrators** to improve staff satisfaction and increase revenue opportunities.

**Radiologists** to reduce exam reporting time and tedium, and increase work satisfaction.

**Patients** to receive optimized ultrasound care at all your locations.

**Sonographers** to scan more ergonomically with fewer manual steps, and produce consistent exams, standardized to the same protocols, from any machine in the fleet.

### References:

1. This information is provided for illustrative purposes only. Each institution's operational data is unique, and results may vary. The general information contained in this illustration is presented in good faith but with no representation regarding its validity for your situation.
2. McDonald M, Salisbury H. Physical Activity, Exercise, and Musculoskeletal Disorders in Sonographers. *Journal of Diagnostic Medical Sonography*. 2019;35(4):305-315. doi:10.1177/8756479319843883.
3. Hogan, A. (2021). Pain Levels and Injuries by Sonographic Specialty: A Research Study. *Journal of Diagnostic Medical Sonography*. <https://doi.org/10.1177/87564793211044122>.
4. Barros-Gomes, S., Orme, N., Nhola, L. F., et. al. (2019). Characteristics and Consequences of Work-Related Musculoskeletal Pain among Cardiac Sonographers Compared with Peer Employees: A Multisite Cross-Sectional Study. *Journal of the American Society of Echocardiography: Official Publication of the American Society of Echocardiography*,32(9), 1138-1146. <https://doi.org/10.1016/j.echo.2019.04.416>.
5. Sound Ergonomics: Cost of injury. <https://www.soundergonomics.com/cost-of-injury.html>. Accessed October 27, 2021.
6. Based on a GE conducted study of 9 sonographers in the US testing two scenarios; C1-6 (Gyn/Abdomen/Renal) and IC5-9 (Gyn/OB1) Scenario, where each participant performed the scanning 10 times individually on both GE's innovative platform and traditional user interface. These results are for illustrative purposes only and represent a specific experience by limited number of individuals; actual results could vary depending upon clinical practice, scanning protocols, and circumstances.
7. GE HealthCare Customer Survey, 2019.
8. Fawzy, N.A., Tahir, M.J., Saeed, A., et. Al. (2023). Incidence and factors associated with burnout in radiologists: A systematic review. *Eur J Radiol Open*. doi: 10.1016/j.ejro.2023.100530
9. An internal, side-by-side comparison study was performed by GE HealthCare. Five sonographers completed sonographer worksheets manually and with ViewPoint 6 for five exam types; Abdomen, Carotid, Lower Extremity Arterial, Pelvic, and Thyroid. Both manual and digital sonographer worksheets required the same types and number of sonographer inputs. The average time saved by utilizing ViewPoint 6 for digital sonographer worksheets was 4 minutes and 42 seconds per exam. Assuming 10 exams performed by a sonographer per day. Assuming a staff of 5 FTE employees each performing 10 exams a day. Illustrative example. Actual results will vary based on your institution's circumstances.
10. GE HealthCare Sonographer Customer Survey, 2022.

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