



GE HealthCare

# St. Luke's University Health Network maximizes ultrasound resource management



To provide high-quality care, ultrasound sonographers need access to the most current and up-to-date protocols on their machine. Yet many facilities still rely on manual protocol updates, an inefficient and time-consuming process that often leaves staff without access to the latest protocols.

When St. Luke's University Health Network in Bethlehem, Pennsylvania, needed to enhance efficiency within ultrasound imaging, protocol management was a logical place to start. The network's manual protocol updates required a Clinical Ultrasound Specialist to physically visit each location with a CD to copy and restore changes to every machine. With dozens of ultrasound devices spread across a greater than 50-mile radius in Eastern Pennsylvania and Western New Jersey, this process was inefficient, time-consuming, and expensive.

Manually performing updates took an average 6 minutes and 48 seconds on each of the facility's 32 Radiology systems – adding up to more than 3 hours of machine updates. A single protocol update also required approximately 210 miles or 5 hour and 39 minutes of driving to travel to all facilities – which can have a significant impact on a department's budget. Adding in travel time to each facility, a single round of updates to the system's fleet of ultrasound systems took a total of 15 hours.<sup>1</sup>

Even the smallest updates to ultrasound protocols, such as additions to comment fields, were delayed until the protocol manager could get to that location. As such, protocol updates were completed infrequently, on an annual or bi-annual basis – leaving sonographers without the latest protocols.

### **Installing AVURI to streamline protocol management**

In October 2021, St. Luke's University Health Network installed AVURI® from GE HealthCare on 49 LOGIQ™ E10 ultrasound devices from GE HealthCare. AVURI is a cloud-based solution that lets ultrasound users manage devices remotely from one central location. It doesn't just allow users to monitor devices across a facility's fleet, but enables clinicians the ability to view, back up and deploy device configurations – all without leaving their desks. AVURI connects devices securely using encryption and storage protocols that require minimum intervention, providing an easy-to-use solution that drives standardization and consistency within an ultrasound fleet.

### **An immediate impact**

AVURI combined with the GE E10 Ultrasound imaging technology puts GE at the forefront of imaging quality, consistency, and excellent patient care. Using Avuri has given St. Luke's University Health Network the technical ability to quickly update the GE E10 image settings, measurements, Scan Assistant protocols, and comment libraries quickly and seamlessly.

Protocol managers, staff sonographers and physicians at St. Luke's immediately reported a positive impact from the installation. The ability to make system-wide changes without being limited by time or distance improved their ability to perform their job, and they were impressed that the application had “no limits on the number of [protocol] changes being made!”

### **Saving time across the network**

With AVURI, performing updates across the fleet of ultrasound systems was simplified to 3 easy steps:

1. Create the update
2. Remotely push to all machines
3. Allow users to accept updates at the convenience of the protocol manager and sonographer

*“I love this platform! With AVURI, we can quickly make updates across our ultrasound devices without having to drive from site to site saving us both time and the effort of manually traveling to each ultrasound system.”*

**Lauren Fazzolari**  
Clinical Ultrasound Specialist

*“AVURI has been a game changer for keeping all our systems the same throughout our entire Network. In the process, it has helped us maintain the image quality that our patients expect and receive when they come to St. Luke's for their studies.”*

**Mary Whitsett**  
Clinical Ultrasound Specialist

AVURI® streamlines protocol updates to 3 simple steps:



Create Changes



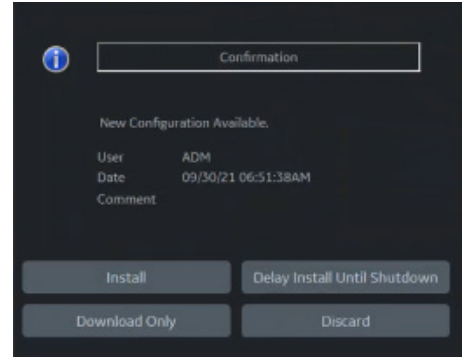
Push Updates



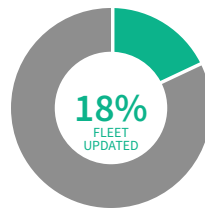
Accept Updates

Now it takes just 7 minutes and 20 seconds to update all 49 systems in the fleet.<sup>2</sup>

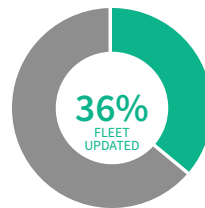
When the protocol manager pushes updates to all machines in the fleet, the sonographer is notified that an update is available. This update will be communicated through a pop-up box on the machine's interface. At that time, they can accept the changes or wait until a time that is more convenient, such as after patient care is finished or at the end of their workday.



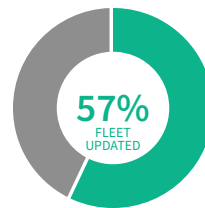
Because of this, within 4 hours of making the change, nearly 20% of the fleet was updated. Even though some machines were in facilities that were only open on certain days of the week, 100% of the St. Luke's ultrasound fleet was updated in less than two days.<sup>2</sup>



4 HOURS



16 HOURS



24 HOURS

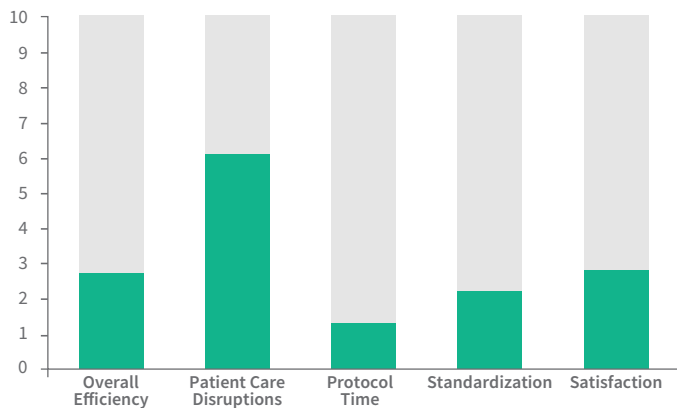


48 HOURS

### Empowering managers and radiologists

In addition to the exponential time savings, AVURI has improved the day-to-day work for the organization's protocol managers, sonographers and Radiologists. Based on the results of a longitudinal repeated measure survey, the perception of protocol management activities prior to AVURI adoption was extremely low. Less than 6 months after installation, users scored all experiences at the highest score possible (10 out of 10).<sup>2</sup>

An unexpected impact of using AVURI was the ability to restore prior configurations on a machine. This empowered both protocol managers and interpreting Radiologists to test changes and trial various protocols, with the ability to easily revert if they were unhappy with those changes. Restoring previous protocols no longer had to be time-consuming or involve additional support from Biomed.



### Increased sonographer confidence

In a survey of 14 sonographers at St. Luke's, 100% of the respondents were aware of AVURI being used in their department. Although they didn't request protocol changes often (on average greater than once per month), they did expect to have their change completed within a week after requested. Sonographers state that most of the change requests they make are due to "adding or updating the exam image order." By using AVURI, protocol managers can now quickly make these updates remotely.

### Improved exam quality

Before the implementation of AVURI, the network only updated protocols once or twice a year. Within the first 90 days of AVURI implementation, the network increased the frequency of updates to one to two times per week. Now protocol managers continuously update protocols one to two times a month. This frequency allows department leadership to ensure ultrasound practice standards are being met, while still being able to develop continuous exam quality in the health system.

### Conclusion

For St. Luke's University Health Network, using AVURI across their enterprise delivered time savings, reduced travel costs, and a significant improvement in overall department image quality and workflow efficiency.

# 9.8

On a scale of 1-10, how important is using the most-up-to-date protocols on your device?

Average survey response among sonographers

*"Before AVURI, changes were only made once or twice a year due to the amount of effort that is required to travel from hospital to hospital."*

**Clinical Specialist**  
St. Luke's Ultrasound



GE HealthCare

#### References

1. Observational field notes collected by a senior member of SUAZIO research and consulting agency.
2. Longitudinal Repeated Measures survey using Likert-Scale data collection administered by SUAZIO research and consulting agency.

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