

Radiology Today

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CRITICAL CONNECTIONS

*Fujifilm provides
a crucial link for
cardiac care.*

A FRIENDLY FACE IN THE CROWD

*Less time on clerical
tasks means more time
with patients.*

PAGE 2

SHARPER FOCUS

*Streamlined workflow
translates to more
efficient care.*

PAGE 4

DIRECTING TRAFFIC

*Keeping all the nodes
of a department connected
is a constant balancing act.*

PAGE 6

A STRONG BACKBONE

*Effective medical
informatics requires
a solid IT infrastructure.*

PAGE 8



A Friendly Face in the Crowd

Cardiology is a challenging field, even more so when the patients are children. The COVID-19 pandemic has only added to the challenges. For example, Cardiology Care for Children in Lancaster, Pennsylvania, has increased its number of telemedicine appointments, made provisions for additional spacing during office visits, limited the number of people in the office at any one time, instituted temperature checks, and required face masks, in addition to providing staff with N95 masks and revamping cleaning procedures for equipment and rooms. Along with the additional safety precautions that are now required, speed and efficiency are more important than they've ever been.

"Not having enough time to get everything done is always a major challenge," says Rebekah Tomredle, RDCS (AE)(PE), the technical director, echo lab director, and sonographer at Cardiology Care for Children.

Cardiology Care for Children draws patients from a two-hour driving radius around Lancaster, but Tomredle says some out-of-state and international patients are seen annually. Many of those patients receive echocardiograms for various reasons, such as heart murmurs in infants and young children

or syncope or chest pain in teens. Tomredle fulfills multiple roles at Cardiology Care for Children but, as the only sonographer, she is the face of echocardiography for the facility. She estimates that she performs 40 to 50 echo exams each week, approximately 1,600 a year. While this volume of patients keeps her busy, it's also her favorite part of the job.

"I've been here nearly five years, so it's been amazing to watch kids I've scanned in the womb now walking and talking," Tomredle says. "Also, it's been wonderful to see the huge changes in kids after they have had a major repair and they start gaining weight, growing, and being more active."

Improving Communication

Providing the best possible care for all of those patients requires that her preliminary report, the current exam, and prior exams be sent to the radiologist as soon as possible. To improve workflow throughout the facility, Cardiology Care for Children installed Fujifilm's VidiStar platform, a cloud-based PACS and image archive, in May 2018. Some of the capabilities

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— Rebekah Tomredle, RDCS (AE)(PE), the technical director, echo lab director, and sonographer at Cardiology Care for Children in Lancaster, Pennsylvania

VidiStar offers include access from anywhere, multimodality and multivendor compatibility, a mobile app, and a referring physician portal. The facility was the first in the United States to pair the VidiStar platform with Fujifilm's Lisendo 880 ultrasound system for cardiology with optimized 2D and 3D capabilities.

One feature that Tomredle finds most helpful is the ability to copy results, no matter how long or complex, into the current report. “Being able to copy forward previous study reports is a huge time saver on really complicated patients,” she says.

Additionally, creating custom report templates for pathologies that require specific wording and automatically populating a graph in a report that shows prior measurements and trends, without having to manually copy from the prior report, makes her more efficient. She also finds that being able to combine multiple

modalities and studies from other facilities under one patient record is highly useful for comparing various studies side by side. These types of information can be invaluable for cardiologists, when considering a diagnosis.

Another time saver is the ability to mark studies for quality improvement. Tomredle says eliminating the need to search for QI studies when quality reporting is due reduces time and frustration.

In addition to streamlining workflow, Tomredle credits VidiStar's fully functional cloud ability with enabling her to work from home when COVID restrictions were in place earlier this year. This flexibility may prove to be especially important as winter approaches.

A critical component of patient care is ensuring that radiology reports are available to referring physicians as soon as possible; Tomredle estimates that the echo

lab receives referrals from more than 600 physicians. VidiStar's referring physician portal makes communication of results to referring physicians much simpler than it previously was, which enhances the value that Cardiology Care for Children can provide to its customers. Tomredle can see when a report has been signed off, without needing to open the study to check, which allows her to get the reports to referrers faster.

With all of the responsibilities she has, Tomredle says efficiency is a necessity. Less time spent on clerical activities means more time spent with patients. And because those patients require highly specialized care, every second counts.

“All of these useful little features save me valuable minutes, which genuinely do add up over time and help me be able to get just that much more done in a day,” Tomredle says.



Sharper Focus

After nearly 20 years of experience in pediatrics—including stints as chief resident at the North Shore University Hospital/Cornell University Program in Manhasset, New York; a three-year fellowship in pediatric cardiology at the North Shore University Hospital/New York University School of Medicine; an assistant professor at the Albert Einstein School of Medicine in Bronx, New York; and an associate professor of pediatrics at Penn State Children's Hospital in Hershey, Pennsylvania—pediatric cardiology specialist Devyani Chowdhury, MD, decided to open her own clinic, Cardiology Care for Children, in Lancaster, Pennsylvania. The clinic treats a wide range of cardiac conditions.

Heading up a busy practice places many demands on Chowdhury's time. In addition to reading medical images and communicating with referring physicians, she sees patients and presents research at medical conferences. She also sits on several professional

committees, such as the Adult Congenital Pediatric Cardiology council and the publications committee of the American Academy of Pediatrics, as well as various medical boards, such as Variety Children's Lifeline and Variety International Children's Foundation. Chowdhury says Cardiology Care for Children is dedicated to local underserved communities and committed to local and international research.

Although seeing patients is her favorite part of the job, Chowdhury's other responsibilities also add value to the practice. Any tool that helps her get the most value from her time, while allowing her to focus on excellent patient care, is most welcome.

Information Where It's Needed

Chowdhury's practice has evolved over the years, but one of the most helpful recent developments was her decision to implement Fujifilm's cloud-based VidiStar PACS and image management platform in May 2018. Chowdhury sees many patients each week, and one of the biggest challenges she has is getting outside hospital imaging data for her patients.

66 ***It's cloud-based with no need for a server, and it gives me the ability to report, edit, and sign off reports remotely. There is also no requirement to log into complicated VPN systems."***

— Devyani Chowdhury, MD, pediatric cardiology specialist and owner of Cardiology Care for Children in Lancaster, Pennsylvania

"VidiStar has made obtaining these images much easier," she says. "It allows me to collate multimodality imaging data, for example, combining MR and angiography images with echocardiogram data."

Because of her busy schedule, Chowdhury was looking for a cloud-based system that would allow her to read remotely. She reads around 95% of her patients' imaging studies in the office, but she finalizes reports from home approximately 50% of the time. She estimates that reading remotely saves her three to six hours each week. VidiStar's cloud-based platform also proved to be crucial for remote work during the COVID-19 shutdowns earlier this year, and Chowdhury often uses it to remotely manage patient care when she is at medical conferences or out of the country. With the pandemic continuing to reshape health care delivery, the flexibility to work offsite is crucial.

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me the ability to report, edit, and sign off reports remotely," Chowdhury says. "There is also no requirement to log into complicated VPN systems."

The system's structured reporting capability has also been a time saver. Chowdhury says the automatically formatted reports and standardized phrasing have improved the quality of her reports. In addition to complete patient information, the reports include information about trends in the patients' condition, which she finds extremely helpful.

"Structured reporting saves time," Chowdhury says. "VidiStar's point-and-click reporting and automatic population of measurements saves me three to four minutes per report."

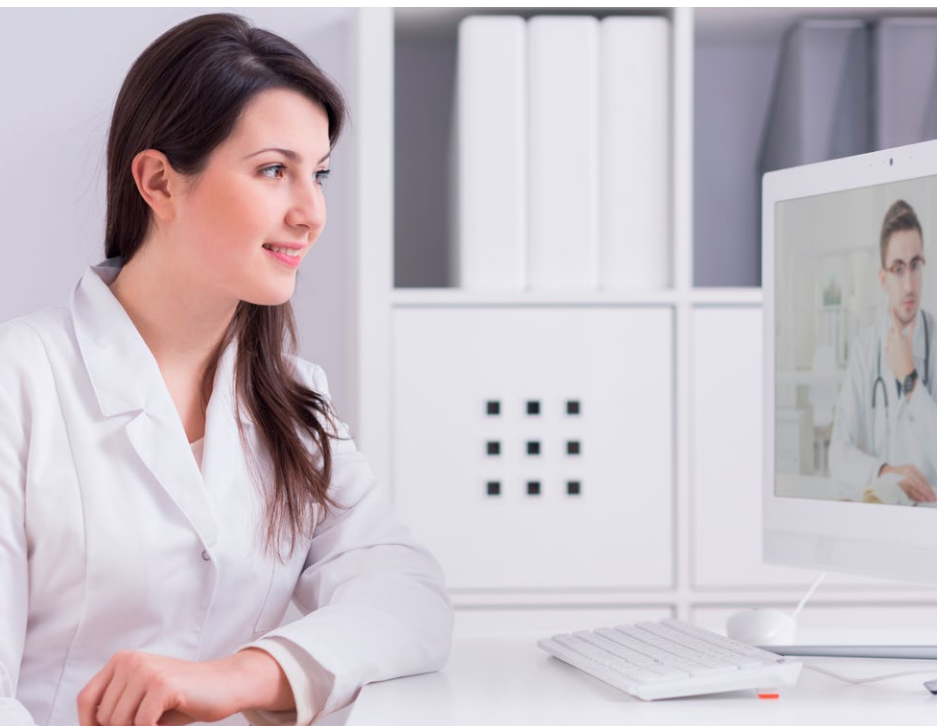
The enhanced reports increase the value that Chowdhury is able to provide to referring physicians. She estimates that she speaks with referrers two to three times a day. She also uses the VidiStar referring physician portal to provide

referring physicians with access to imaging studies and her final reports. She says this has significantly streamlined her communication with referring physicians.

Along with helping to standardize reporting, Chowdhury says VidiStar has helped her organization meet accreditation requirements. Overall, the workflow improvements have increased efficiency throughout the practice, allowing all of its members to deliver care more effectively.

"VidiStar has improved our quality and workflow," Chowdhury says. "It provides high image quality, fast, and is user friendly."

The workflow assistance has helped Chowdhury to get more accomplished within her busy schedule. She says the ability to create and send reports more efficiently, in particular, allows her to devote more time to seeing patients. And taking care of patients is why she started her clinic in the first place.



Directing Traffic

Merit Health Madison is the only medical center in Madison County, Mississippi. The 113,000-square foot hospital and its affiliated sites have been serving Madison, Copiah, Hinds, Rankin, and Simpson counties as well as Jackson, Mississippi's capital and largest city, since 2011. The service area encompasses a roughly 60-mile radius from the medical center. Madison County is the sixth largest county in Mississippi, with a little more than 106,000 residents. The population of the other four counties combined is approximately 442,000, with Hinds being the largest county in the state and Rankin being fourth.

It's no surprise, then, that managing the hospital's medical imaging, along with that of six sister hospitals in the Jackson-Vicksburg area, keeps Bryan Burnside, RT(R) (CT), extremely busy. As the radiology director of Merit Health Madison, Burnside oversees 25 employees and

is responsible for management of the radiology department, including payroll, hiring, workflow, capital equipment requests, service contracts, and progress improvement, among other duties. Keeping all the nodes of his department connected, informed, and functioning properly is a constant balancing act.

"I truly enjoy having the opportunity to build a highly efficient team to service the needs of the community," Burnside says. "But having money dictate decisions can be difficult."

Growing the Network

Efficiency is important to everything that Burnside does. One area, in particular, that requires maximum efficiency is making sure that medical images are available to the clinicians who need them, when they need them. Burnside estimates that the hospital and its satellite sites handle approximately 500 imaging exams each week and more than 26,000 a year. Around 1,000 of those are done in the cardiology echo lab. To help expedite image sharing, Merit Health Madison implemented Fujifilm's VidiStar PACS and image

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management platform. The platform includes several useful features for clinicians, such as viewing for both DICOM and non-DICOM modalities, side-by-side multimodality viewing, and the Heartview Nuclear Viewer, which allows remote processing, viewing, and interpretation of cardiac nuclear stress studies in multiple display formats.

Burnside has been pleased with the results. He says VidiStar has decreased operational costs by \$25,000 while increasing image volumes and revenue by \$25,000. It has also helped to reduce turnaround time on reports. Physicians have decreased their reading and interpretation time to less than 15 minutes, and reports on all exams are completed in less than 24 hours. Additionally, sonographers have decreased exam times to less than 15 minutes, which has facilitated an increase in the number of exam slots that the organization can fill.

VidiStar has also helped Burnside track imaging metrics. One of the metrics that he tracks is the positive rate for nuclear stress studies.

Perhaps the biggest advantage, however, has been the ease of use and speed for cardiologists reading remotely. Five clinicians use the VidiStar PACS, and Burnside says remote viewing has been a popular option. The clinicians appreciate having the flexibility to read studies onsite or offsite, depending on their circumstances. With telehealth becoming a bigger piece of the health care puzzle and the potential need for increased social distancing due to the COVID-19 pandemic, not being tied to a single location may prove invaluable for the foreseeable future.

When it comes to evaluating technology platforms, Burnside says ease of use and access are of paramount importance for his department and organization. When the VidiStar contract was up for renewal,

Burnside's experience with the platform made him a logical choice to play a significant role. He was happy to do it.

"I was involved in setting up the contract and introducing this product to sister sites," Burnside says. "I then got our IT department involved, and they handled the technical part of it."

Other key considerations were expanding VidiStar access to two of Merit Health Madison's future sites and developing interfaces between the platform and the organization's EHR. Merit Health Madison manages its own server and has connected some sites to the EHR thus far. Overall, Burnside says VidiStar has helped him make the most of his time and budget.

"Time management and spending considerations are the most challenging aspects of my job," Burnside says. "The VidiStar platform has helped me to manage both of them better."



A Strong Backbone

Effective medical informatics requires a solid IT infrastructure. With medical imaging being a crucial part of modern care and image volumes continuing to increase, multiple data silos and inefficient frameworks can create delays and confusion. When it comes to taking care of patients, especially those with serious medical conditions, less-than-ideal connectivity can be annoying, at best, or extremely costly in both human and reputational terms.

David Tamborella, MCITP: Enterprise Messaging Administrator at New Orleans Integrated Technologies, is tasked with administering the network for Louisiana Heart Center. The practice has sites in Bogalusa, Chalmette, Covington, Franklinton, Hammond, and Slidell. The sites are located in the southeastern part of the state, around New Orleans, an area with a

population of approximately 879,000. Ensuring that Louisiana Heart Center's physicians have access to images whenever they need them and that the practice meets record retention guidelines requires a robust and responsive IT network.

"Data retention, with all of the studies generated by the practices, is the most challenging part of my job," Tamborella says.

Support Where It's Needed

Through numerous hospital affiliations in the practice's geographic region, Louisiana Heart Center provides services such as cardiac catheterization, placement of stents, angioplasty, and pacemaker implantation, among others. The organization prides itself on not only offering first-rate care, but also advocating for patients as they navigate the complexities of the medical system. This requires physicians who can deliver care efficiently, for example, by reading studies and submitting reports remotely from various locations.

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as it allows them to work from home, on the road, or wherever they're needed. Patients and referring physicians appreciate that they receive imaging results faster. Perhaps the biggest driver behind remote reading's rising popularity, however, is the COVID-19 pandemic. In addition to the normal COVID-related concerns that most people have, frontline health workers such as physicians need to avoid COVID so they can continue providing essential care. Also, with many states imposing social distancing restrictions in the spring and the potential for additional restrictions this winter, health care providers would be wise to develop plans B, C, and D for remote services.

To streamline imaging workflow and allow its doctors to access medical imaging from multiple locations, Louisiana Heart Center installed Fujifilm's VidiStar PACS and image management platform. The VidiStar viewer offers features such as the ability to view DICOM and non-DICOM images or

side-by-side images from different modalities. In addition, the Heartview Nuclear Viewer allows remote reading of cardiac nuclear stress studies. The VidiStar PACS allows access from any location and provides the capability to store, search, and manage images from any modality or any manufacturer, as well as a zero footprint referring physician portal for images and reports. It also includes a mobile app that allows users to view and share images and clips from any iOS-enabled device. Tamborella, who is the network administrator, evaluated and implemented VidiStar.

"The organization wanted centralized image storage for multisite use, and web access for external, multilocation reading and reviewing of studies," he says.

The practice chose an on-premise configuration that was easy to implement, Tamborella says. He adds that it was also easy to set up an interface between VidiStar and

the practice's iMed Core EHR. Tamborella has seen a noticeable difference in workflow since the platform came online.

"There is a significantly reduced lag time between the generation and completion of studies with VidiStar," he says.

There are currently 25 users on Louisiana Heart Center's VidiStar platform. Eight of them are cardiologists. Tamborella estimates that the platform processes approximately 325 cardiology studies each week. He adds that he is able to close most technical support tickets in six hours or less. That type of reliability not only pays dividends for the practice in time saved and more efficient care, it also allows Tamborella to pursue other high-value objectives that offer additional benefits.

"The amount of time spent managing study data, such as ensuring backups, image redundancy, and other image-related issues has dropped considerably," Tamborella says. "That has allowed me to have more free time to complete other projects."

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