

Small Investments, Significant Gains: The Key to Advancing Value-Based Healthcare is Leveraging Web-Based Diagnostic Reporting

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Six years ago, the non-invasive cardiovascular lab (NICL) at 540-bed St. Dominic Hospital in Jackson, Mississippi, faced something of an uncertain future. The rules for maintaining accreditation, set by inter-societal accreditation commissions, require that all vascular exams get interpreted within 48 hours of image acquisition. For cardiac exams, the read must wait no longer than 24 hours.

However, at St. Dominic, average turnaround times for the 33 cardiologists and vascular surgeons who read studies for the NICL were ballooning up to—or already stretching past—both those limits.

“Our situation at that time was very challenging,” says Chad Ainsworth, manager of the lab. “We were concerned about losing our accreditation.”

The root cause of the struggle had nothing to do with complacency and everything to do with technology: The physicians lacked ready access to the imaging data the lab was capturing, as St. Dominic’s NICL was tied to a legacy standalone diagnostic imaging and reporting system located in the lab and unconnected to any network. Few of the busy docs came to the hospital on a daily basis. Most saw patients elsewhere. All had to travel to the lab to read exams.

“If the physician was going to be in clinic for several days in a row when a study was ordered for him to read, that study might sit as long as four or five days



before getting read,” Ainsworth explains.

As it happened, Ainsworth had joined St. Dominic’s after running his own mobile ultrasound business for several years. He had considerable experience transferring images and cardiology reports to physicians over the Internet via FTP. Leveraging his skills as an entrepreneur as well as a technology power user, he successfully made the case to hospital leadership for a state-of-the-art diagnostic imaging and reporting system specialized in cardiovascular lab reporting that would aim squarely at solving the NICL’s slow-turnaround problem.

Ainsworth led the product selection process, hearing pitches from a handful of cardiology software

vendors. He also heard from a cardiology clinic in Jackson about a company based in Greenville, S.C., called VidiStar. The clinic administrator was quite pleased with their purchase, Ainsworth recalls. “They told me we owed it to ourselves,” he says, “to at least give VidiStar a call.”

Call he did—and soon found that VidiStar’s web-based viewing and reporting product “offered way more customization and features than any other company’s offerings,” Ainsworth says. “We’re a pretty large facility. We buy top-of-the-line stuff. I could see they knew what they were doing.”

Turning Around Poor Turnaround Times

The NICL at St. Dominic Hospital installed VidiStar’s cloud-based imaging and reporting system in 2013 and opted for building a virtual machine server to house the software onsite. In the years since then, its turnaround times for image interpretation have improved so markedly that its patient volumes surged 30 percent over the past four years, at a clip of 8 to 10 percent growth per year. Today the lab keeps four to five technologists humming with 35 to 45 procedures per day, and it’s expanded its operating hours in order to accommodate the increased demand.

Ainsworth says the lab’s dramatic performance recovery is owed largely to VidiStar’s web-based architecture. This allows physicians to read from practically anywhere at any time. In addition, dual-monitor workstations located around the hospital and in the doctors’ offices let them view images on one screen and reporting info on the other for easier reading and reporting.

“We’ve gone from echocardiograms waiting in excess of 18 hours for interpretation down to, on average, less than two hours,” Ainsworth says. “In most cases, we have interpretations within one hour.” The efficiency gains have translated into a much better care experience for patients, he adds. “We’re getting them the care they need and getting them out of the hospital faster.”

Today’s VidiStar is part of Hitachi, which acquired the company in January. “So far, the customer service is exactly the same,” which is to say topnotch, Ainsworth says. “I hope it stays like that.”

Collaboration Station

The noninvasive cardiovascular lab at St. Dominic Hospital performs about 22,000 procedures per year, of which 13,000 are echocardiography procedures and the rest are vascular exams. The lab’s service lines include carotid ultrasounds, arterial stress tests, arterial duplex scans, venous duplex ultrasounds and Holter monitoring. A separate vein lab, also managed by Ainsworth and connected to VidiStar, accounts for another 8,000 to 9,000 procedures.

At the time the NICL chose and installed VidiStar, the company didn’t yet have clinical applications for some of the imaging modalities with which the lab was equipped, such as arterial Doppler and transcranial Doppler. In these instances, the vendor and customer collaborated to create and pilot new applications.

“Whenever we got to questions about what they could do and what our future needs might be, the answer was, ‘Yes, we can do that’” Ainsworth says. “That was the answer every time.” The versatility made their choice of vendor a “no-brainer,” he says, adding that any potential for buyer’s remorse was quashed as VidiStar’s engineers made good on each of their promises.

Further, as an experienced technologist himself, Ainsworth appreciated VidiStar’s openness to his request for permission to modify templates. “I usually don’t do that anymore, because we feel we have our templates somewhat perfected,” he says. Still, the collegiality stood in stark contrast to his experience with a former vendor. “[The other vendor] wouldn’t allow you to do anything like that yourself,” he says. “And then they would nickel and dime you with every little change you wanted them to make.”

Templates Tell the Tale

And then there's the efficiency quotient. "The VidiStar templates are the greatest thing from an ease-of-use standpoint," Ainsworth says. When the physician reads a normal exam, he or she simply views the preliminary report the technician provides—and then just signs.

"It's that simple," he adds. "Prior to VidiStar, we had to do these extensive reports, and it would take upwards of two to three minutes, on average. For a normal study in VidiStar, we can actually have a signed report within 20 to 30 seconds."

The lab even uses the templates for abnormal studies—including "grossly abnormal," Ainsworth says, explaining that the template has pre-filled statements for the physician to find. These are presented to the doctor on a digital worksheet that can be revised, tweaked or OK'd. "The preliminary report is done per the templates we've created, and we just modify those for the abnormal studies," he says.

Ainsworth says the NICL's technologists have complimented VidiStar on how easy the PACS has made it for them to look up prior exams and perform preliminary tasks before imaging their patients.

"Before we had VidiStar, it was very tedious to look up a patient's previous echo, for example," Ainsworth says. "VidiStar has made those kinds of processes a lot easier."

A Cardio Lab Back on Top

As for the physicians, it goes without saying that the portability of reading via VidiStar versus the fixed locale of the NICL's previous system was enough to gain their enthusiastic buy-in. However, on top of that, several of the doctors have embraced VidiStar's analytics offerings.

"We have cardiologists who are really into metrics on turnaround times" and other performance metrics,

Ainsworth says. "Throughput is a big thing for our cardiologists, and they talk nonstop about their metrics on meeting goals." In these days of value-based payments, such metrics translate into maximized reimbursement, he points out, "especially when there are co-management agreements between cardiology groups and hospitals." The physicians work extra hard and are extremely efficient in reading echoes, he notes, so they can do their best for their patients while doing well for themselves.

Asked to reflect on how far the noninvasive cardiovascular lab has come at St. Dominic Hospital since those days when accreditation was on the line, Ainsworth doesn't hesitate.

"I feel that we're in our prime right now," he replies. "We are caring for our patients effectively and efficiently. We serve our community with health fairs and free cardiovascular screening events. And we're big advocates of population health and disease prevention. I think these qualities position us for continual growth within our community and for providing the best care that people in our community can get."