

Your cardiology data is valuable. Put it to work.

See what moving to a CVIS did for
one health system and its patients.



What would benefit patients in your cath lab right now: Entering their test results into the EMR and double-checking them for accuracy? Or giving those patients your analysis of the next steps that they should take in their care?

Of course, both are important. But access to the data is a critical bridge between them.

To improve the cath lab workflow, most hospitals automate some of the reporting steps using a cardiovascular information system (CVIS). Today, that's essential.

One Midwest health system found that implementing a CVIS allowed them to capture data in ways that gave their staff and bottom line a boost. They were able to unlock data they had been collecting for years and shift their focus more toward analyzing data and treating their patients.

Challenge

For clinicians and staff in a typical cardiovascular department, the pace of the workday varies greatly. It can range from emergent, exciting and life-saving care to tedious transcription, data entry and oversight of detailed reports. During treatments, staff spend time entering patient data manually. Post-treatment, they spend more with transcription, review and sign-offs.

Individually, these processes can slow down patient care, introduce error in data entry, and delay submission to specialists and to registries. Together, they can compromise overall productivity and, potentially, care.

One large medical system in the Midwest US wanted to find new health technology to address their manual processes. And their culture supported it. Their cardiology services enjoyed years of national recognitions for quality. Hospital administrators prioritized the use of both basic and emerging technology to improve care. For their efforts overall, the system earned additional national honors for their "high performing" healthcare IT initiatives.

The high-level goal for any new health technology had implications for the health system's clinicians and patients. They wanted confidence that important health data would land seamlessly where it's needed most: with the patient's electronic health record (EHR), other specialists, data registries and medical coders. Unfortunately, complexity compounded their automation challenges. Structured and unstructured data from its cath lab, echocardiology and nuclear medicine departments were crisscrossing 60 hospital and provider sites over four counties.

Working from a strong clinical foundation, the teams in the cath lab, echocardiology and nuclear medicine departments focused on finding technology that could better capture their data. Specifically, solutions to allow them to use it in ways that could inform strategic decisions related to patient care, quality and procedures.

Their goals:

- Improve physician and staff workflows
- Improve speed and accuracy of data entry
- Gain cost savings in technology integration, contracted services and more
- Use their own data to provide additional strategic insight and direction



Transformation

Leadership looked outward for help. Given the health system's large size and high patient volume, decisions regarding any external clinical-IT consultants and new solutions merited deep analysis. They wanted to know: What does a potential partner offer in the way of capabilities and performance? Related, decision-makers were eager to avoid a repeat of a prior experience, where a promised return-on-investment (ROI) in health tech was not realized.

Hospital administrative, IT and clinical leaders evaluated the value that Merge-branded solutions offered in the health information and informatics space. Providers across the U.S. have used these imaging solutions for over 25 years to manage billions of patient medical images.

The health system's leadership shared what ROI gains they sought. Consultants gathered relevant data points from the organization's own databases, analyzed existing interoperability among those systems, and identified where new and better integrations would provide the best and most valued ROI.

The consultants' recommendations focused on how two solutions, Merge Cardio™ and Merge Hemo™, could improve:

- Quality of patient care
- Professional performance
- Reporting
- Medical billing

Merge Hemo offers several features to improve the clinical team's speed and accuracy. Merge Cardio helps make clinical workflows more efficient and gives access to more comprehensive patient records. It integrates digital patient records from a centralized server, generates reports, and also distributes the data to other databases. Merge Cardio can also automatically capture financial charges for professional and technical services, which can increase speed of reimbursements.

For the cardiologist, a key benefit of using the Merge solutions was being able to view all the information they needed on a single screen after one log-in. This included relevant notifications of past diagnoses and other key medical information consolidated from the patient's EHR. Report details from Merge Hemo are also automatically available

within Merge Cardio, providing them an interactive, hierarchical timeline view of their patient's cardiovascular record. This meant that physicians no longer needed to switch between screens or conduct time-consuming searches to get important information.

As part of the physician's and staff's normal workflow with the Merge solutions, post-treatment reporting typically consists only of review and editing of the auto populated records – which frees up more time in their day. The cath lab team found the platform easy for the end-user, even before customization. They also valued that it uses one central server – reducing operational expenses.

Together, these solutions helped the health system achieve its cost and staff-related goals, as evidenced by key data points. For example, the system saved labor costs for a range of staff—from physicians to echo techs, registered nurses, coders and transcriptionists. (See Table 1)

Table 1

| | Time saved per study (minutes) | # of annual studies | Total time savings annually (minutes) | Labor rate | Total annual cost savings |
|------------------------------|--------------------------------|---------------------|---------------------------------------|----------------------------|---------------------------|
| Echocardiology | | | | | |
| Data entry | 5 | 9027 | 45135 | 0.59 | \$ 26,629.65 |
| Stress data entry | 10 | 324 | 3240 | 0.59 | \$ 1,911.60 |
| Echo reporting** | 5 | 9351 | 46755 | 2.07 | \$ 96,782.85 |
| Data collection-Registry | 2.11 | 9027 | 19046.97 | 0.58 | \$ 11,047.24 |
| | | | | | \$ 136,371.34 |
| Catheterization | | | | | |
| Overall | 5 | 2389 | 11945 | 0.58 | \$ 6,928.10 |
| Management | 10 | 2389 | 23890 | 0.58 | \$ 13,856.20 |
| Technical | 5 | 2389 | 11945 | 2.065 | \$ 24,666.43 |
| Executive | 20 | 2225 | 44500 | 0.58 | \$ 25,810.00 |
| | | | | | \$ 71,260.73 |
| Nuclear Medicine (NM) | | | | | |
| Data Entry+DMS | 4 | 3442 | 13768 | 0.59 | \$ 8,123.12 |
| Stress data entry | 6 | 324 | 1944 | 0.59 | \$ 1,146.96 |
| NM Reporting** | 5 | 3442 | 17210 | 2.065 | \$ 35,538.65 |
| Data collection | 2.11 | 3442 | 7262.62 | 0.58 | \$ 4,212.32 |
| | | | | | \$ 49,021.05 |
| | | | | Combined total | \$ 256,653.12 |
| | | | | Benefits (30 %) | \$ 76,995.94 |
| | | | | Total Annual Cost Savings* | \$ 333,649.05 |

Salary assumptions (based on local labor rates via ZipRecruiter and “Hourly rates”)

| Salary assumptions (based on local labor rates via ZipRecruiter and “Hourly rates”) | Hourly rates |
|---|--------------|
| Echo tech | \$ 35.16 |
| Cardiac RN | \$ 35.00 |
| Coder | \$ 17.92 |
| Cardiologist | \$ 123.91 |
| Transcription | \$ 15.00 |

*Including staff salary and benefits

**Time savings based on interviews of staff where possible. Time savings for reporting based on 50% typical reported time savings.

Using Merge Hemo and Merge Cardio, the team saw reductions in data entry and transcription delays.

Other benefits that helped the health system meet or exceed its goals included:

Improved physician and staff workflows

- Enabled physicians to read and sign reports remotely
- Eliminated duplicate and manual entry of data
- Reduced report turnaround by reducing editing of post-procedure reports and approvals
- Decreased the overall staff time required per procedure

Improved speed and accuracy of data entry

- Eliminated manual data entry for IAC Echocardiography (formerly ICAEL accreditation and for MQSA (Mammography Quality Standards Act)
- Eliminated manual entry of data into structured reports and export to registry submission summaries
- Eliminated printing and scanning of final reports and notes into the EHR
- Improved standardized processes
- Decreased mis-registration of data

Increased cost savings

- Integrated new technology with existing solutions, with minimal involvement of IT staff
- Reduced medical materiel waste during procedures
- Eliminated third-party service contract for transcription services, and reduced costs for other contracts

Looking forward

For this health system, analysis of the Merge-branded solutions verified impressive savings of time and cost. Next, leadership can use their structured and unstructured data in new ways to improve care and organizational efficiencies.

As metadata, their own information can offer valuable insight into the cardiovascular service line. These insights can impact the organization broadly, and patients specifically.

For example, outcomes analysis can help the team:

- Uncover areas of focus to improve inefficiencies
- Point to opportunities for medical research
- Support the business case for new or different valve and heart cath clinics
- Identify patients based on specific medical criteria who could benefit from new procedures

Metadata analysis of structured and unstructured workflows can also support clinicians by pointing to opportunities for skill or process improvements. For example, by applying artificial intelligence (AI) to timestamps in the cath lab, staff can identify trends that point to additional ways to streamline patient care.

So, your team wants to balance the need for better data with the goal of better healthcare? Leaders today are focusing on this future-state, where manual tasks are not a time-consuming part of each day. Instead, the work can focus on consultations with colleagues and conversations with patients. With experienced consultants, innovative tools and data insights, it's possible.

About Merative

Merative is a data, analytics and technology partner for the health industry, including providers, payers, life sciences companies and governments. With trusted technology and human expertise, Merative works with clients to drive real progress. Merative helps clients reassemble information and insights around the people they serve to improve healthcare delivery, decision making and performance. Merative, formerly IBM Watson Health, became a new standalone company as part of Francisco Partners in 2022. Learn more at www.merative.com

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