



## MERCY – Enterprise imaging platform supports ‘anytime, anywhere’ radiology

Offering access to best-of-breed technology through a PACS as Service model could bring improved efficiency, and greater care to hospitals across the US.

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By John McCormack

**G**rowth often has its awkward stages. The uncomfortable reality is not lost on leaders at Mercy in the US. The health system, which includes more than 40 acute care, managed and specialty hospitals as well as 800 physician practices and outpatient facilities in Arkansas, Kansas, Missouri and Oklahoma, was experiencing some pangs a few years ago, as it found itself with a hodgepodge of imaging technology that had come into play at various points throughout its history.

Having been an early adopter of electronic health records (EHRs) to integrate and standardize operations across Mercy’s providers and points of care, it was now time for the health system to take a similar enterprise approach to imaging.



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“We had nine separate PACS (picture archiving communication systems) and 13 radiologist groups. And, we only had a single long-term archive that was supporting all of that. It was a real big challenge for us,” said Larry Aubry, vice president of business partnerships for Mercy Technology Services.

With this collection of disparate technologies, radiologists were struggling to efficiently “get the right images in front of them at the right time,” Aubry noted. System lock-ups and crashes were becoming increasingly common and difficult to deal with. And, the imaging platform didn’t look as if it would be able to support innovative initiatives such as teleradiology moving forward. Perhaps most troubling, the system, as it stood, was not optimally serving patients.

“We have patients who transfer between facilities. And it was difficult to transfer images. In some instances, you could burn a CD and send it with a patient but if that didn’t happen, we were having to repeat studies,” said Steve Bollin, regional vice president of radiology support services at Mercy. These duplicate studies would then result in additional costs for the health system and additional radiation for patients, two situations the health system wanted to prevent.

### ASSEMBLING THE PIECES OF THE PUZZLE

Leaders realized that Mercy needed a new enterprise imaging platform that would enable radiologists to read images “anywhere, anytime,” and support various upgrades that could enhance patient care. Yet they wanted to keep the current working model intact. “Our radiologist groups each have their own contracts with each of the hospitals they read for. We weren’t looking to change that radiologist model,” Aubry said.

While Mercy executives wanted to maintain those relationships, they still sought to better utilize radiologists across the healthcare system and help address radiologists’ burnout.

“We wanted to be able to leverage our subspecialty capabilities. We have radiologists who are trained in neuro, musculoskeletal



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Toni Dudley, executive director, IT radiology team, Mercy Technology Services

and breast imaging – and offering those capabilities remotely through our system would enable us to get better diagnosis up-front for a wider variety of patients. By being able to offer these reading services at our smaller facilities, not just our larger facilities, patients would not need to travel to alternate sites for imaging. As a result, we could minimize delays and eliminate duplicative imaging,” Bollin remarked.

Leaders also recognized that Mercy needed to take advantage of looming innovations. “We wanted to position ourselves for the future. We knew decision support and artificial intelligence were coming – and we wanted to take advantage of these advances,” Aubry said.

To accomplish such goals, Mercy needed to move toward a new enterprise imaging platform. After reviewing options from multiple vendors, Mercy leaders and radiologists chose a variety of best of breed technologies, including the Visage Imaging enterprise imaging platform, Medicalis Workflow Orchestrator from Siemens Healthineers and Nuance’s PowerScribe 360 speech recognition and reporting.

In fact, Mercy Technology Services (MTS), the information technology arm of the health system, is not only providing the imaging platform to Mercy hospitals but it’s also offering it in a PACS as a Service model to hospitals across the country. Hospitals can choose to subscribe to the bundled services or to various needed components. The technologies are securely hosted in MTS’ cloud, making it ideal for small to mid-size hospitals and health systems looking for efficiency and cost-effectiveness.

For radiologists, “it’s like using Netflix to read imaging exams. They’re not downloading any studies to their workstation; those studies are rendered at the server level and the workstation is used merely for display. They are not storing any protected health information on there. It just quickly loads and streams the images that the radiologist needs or wants to read and the radiologist doesn’t have to worry about



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*Source: Mercy Technology Services*

anything else. They're not waiting on relevant past studies; all priors are at their fingertips. They're not swivel chairing from one system to the other. And they're able to manage their workload on a single workstation," Bollin said.

The Medicalis Workflow Orchestrator makes it possible to create a single worklist by integrating information from multiple EHR systems. The Workflow Orchestrator provides radiologists with a single sign-on process, empowering them to access all relevant patient information by logging onto just one application. In addition, radiologists can depend on the system to implement desired workflows based on target service levels, sub-specialty reading and many other characteristics.

As such, the Workflow Orchestrator can help diagnostic accuracy by supporting remote reading by the most appropriate radiologist, regardless of their physical location; reduces unwanted variations by normalizing, optimizing and standardizing information from multiple IT systems on a single integrated platform; and increases workforce productivity and efficiency by auto-assigning exams to the right radiologists through workload balancing capabilities.

### **EMPOWERING CLINICIANS TO DELIVER BETTER CARE**

Perhaps best of all, the Workflow Orchestrator makes it possible to improve patient care. Overall, the health system is experiencing a shorter time to treatment because attending and referring physicians have access to study results much faster. Consider the following examples: with mammography, radiologists need to compare the current study to the prior study to see if a breast cancer is developing. Typically, radiologists would have to wait a few hours to access the prior study to make this comparison. As such, they would either wait a considerable time to confirm that the cancer classification that they are seeing is not a cancer but a normal part of the patient's anatomy or they would recommend moving forward with a biopsy – something that caregivers don't want to do and patients definitely don't want to experience, if not necessary. With stroke patients, the timeliness of getting a CT or MRI



Mercy's radiologists have decreased report turnaround time by up to 50 percent.

Source: Mercy Technology Services

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Steve Bollin, regional vice president of radiology support services at Mercy

study turn-around is directly tied to quality of care. Indeed, the faster a study can be read and treatment decisions can be made, the more brain tissue clinicians will be able to save.

While the Workflow Orchestrator makes relevant studies as well as information from the EHR immediately available, the other components of the imaging platform also help to improve efficiency. The new “streaming” PACS, for example, launches all present and past images for all modalities regardless of size in the blink of an eye. Voice recognition makes it possible to more quickly edit, review and produce reports. The three tools combined remove friction for busy radiologists and reduce the time to treatment.

“We monitored radiologists’ workstations to see how quickly our image load time was with our previous PACS, compared to our current PACS, and it was cut in half. We are talking seconds here, but multiplied over thousands of studies that’s a huge bonus. This speed comes largely from not having the local work station churn with all the studies downloaded to it. With images rendered on the server side, the studies launch to the workstation up to four times faster,” said Toni Dudley, executive director, IT radiology team, Mercy Technology Services. With all of the components working together, Mercy’s radiologists have decreased report turnaround time by up to 50 percent.

In the final analysis, the new enterprise imaging system is eliminating much of the discomfort that radiologists formerly experienced. “Time lags. Missing images. Multiple systems. Those are all things that cause distractions and hurt radiologists’ efficiency when they need to be focusing on patients. Now, radiologists have all the pieces of the puzzle to help them really make a better diagnosis. And that simply leads to improved patient care,” Bollin concluded. ■

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