Radiology Practice: The Answer to Managing IT Complexity

By Mary C. Tierney, MS

It's just complicated. That's the view many radiology practice leaders have of managing their information technology. But bringing together the right systems, software, infrastructure, and team can conquer that—even for large, complex practices like Central Illinois Radiological Associates (CIRA). Interpreting more than one million studies per year, and serving more than 26 hospitals, cancer centers, and clinics across multiple hospital systems utilizing multiple IT solutions, the secret sauce is a single worklist that helps unify study management across all sites.

Managing IT complexity is the No. 2 concern of radiology practice leaders, according to a recent poll by *Radiology Business Journal* and RadiologyBusiness.com. The leaders who chimed in include radiologists, executives, administrators, IT managers and directors. This article is the second of three to dive into the top three pain points radiology practices face based on the survey—and to offer effective solutions.

Central Illinois Radiological Associates (CIRA) is one of the Midwest's largest private diagnostic and interventional radiology groups, offering quality subspecialized radiology services across central and southern Illinois. CIRA's expertise includes interventional radiology, women's imaging, cardiovascular imaging, neuroradiology, musculoskeletal imaging, nuclear medicine, and pediatric imaging among others. The practice employs 74 full-time and 13 part-time board-certified, fellowship-trained radiologists and seven mid-level providers. The 26-plus provider

Eric Lacy

Steve McHenry

orgs on its client list include such regional powerhouses as OSF Healthcare (OSF) and Hospital Sisters Health System (HSHS).

Over the last few years, CIRA radiologists grew frustrated trying to effectively and efficiently read high volumes of exams from 15 separate PACS, each with separate worklists. Physicians were logging in and out to view and read studies— while CIRA IT staff were focused on keeping their systems and interfaces functioning properly. While the PACS solutions individually offered sufficient interpretation workflow within the organization in which they were deployed, worklists were too complex to maintain, and physicians needed a better view of the big picture of their tasks for the day, recalls Eric Lacy, CIRA's director of clinical applications. "We really needed to normalize the way a worklist looked and felt for a physician, indepen-

dent of what the viewer was going to be," he says. "A single, enterprise worklist would centralize all radiologists tasks and reduce the time and complexity of IT tasks."

IT Committee Chair Dr. Eric Bugaieski who serves as Director of Pediatric Radiology & Medical Imaging as well as Dr. Kevin Fahey, IT Committee Co-chair and Director of Cardiothoracic Radiology & Medical Imaging offered insight and leadership throughout the whole process. Both have extensive knowledge in workflow and usability heuristics key to successful vendor selection and implementation.

The practice looked around, kicked a lot of tires, asked a lot of questions, and in the end chose a vendor-neutral intelligent worklist that can orchestrate workflow across all sites and connect all the PACS. Change Healthcare Workflow Intelligence™ interfaces with the 15 PACS viewers across all the sites they read for, consolidating interpretation and quality tasks to promote visibility and communication. It is the job of an enterprise worklist to improve productivity by aligning demand with supply via dynamic assignments, automatic escalation, and study assignment to the most appropriate radiologist available. In addition, the system facilitates quicker turnaround times and improved efficiency, offering a look inside the data to visualize and measure workflow and trends. It is a tool to improve quality and performance clinically, operationally, and financially.

"We needed to look at the big picture, both from a physician and IT perspective," Lacy says. "Regardless of where a physician is physically located, their worklist will be comprised of the appropriate studies for interpretation within their slot. This allows us to offer all the hospitals we serve the subspecialized care CIRA brings to the table."

With a single worklist, radiologists see all their studies within their specific subspecialty throughout all hospitals and systems they read for, all prioritized appropriately. "That includes interpretation solutions for CIRA as well as quality strategies for MACRA,

specifically MIPS, within the physician's worklist," Lacy says.

Mission-Driven Efficiency

Improving workflow and calming IT complexity is CIRA IT's mission. Lacy is responsible for clinical workflow and operations within IT, including day-to-day operations as well as evaluating, recommending, designing, and testing clinical workflows that are IT-specific. He also focuses on troubleshooting and resolving inefficiencies within the practice. In fact, it was this activity that led the group to seek out an enterprise worklist. It is also Lacy's job to interface with various stakeholder committees— Executive, IT and Operational—to bring forth clinical and IT workflow challenges and propose solutions.

He works alongside Steve McHenry, the senior informatics engineer who focuses on clinical informatics standards such as HL7 and DICOM. He also works on software development, specifically applications that need to be developed to facilitate and boost workflow. "A lot of the pain points came in normalizing information," he says, "including aggregating information from multiple EMRs into an enterprise worklist comprised of both interpretation and quality spaces."

To improve workflow and reduce IT complexity, the radiology group focused on a better way to get the appropriate work to the appropriate radiologist to offer the most appropriate care. "This really affects patient care," Lacy says.

They also wanted a better way to dig into the data and showcase their high performance, Lacy offers. Looking beyond the measure of turnaround times, they are looking at quality metrics such as peer review and critical test results management. "Once appropriately managed you can pull all your organizations data together in your business intelligence (BI) tools to offer a dynamic display for discussion with your hospital partners. This helps build and strengthen that partnership," Lacy says.

"The No. 1 intention of an enterprise worklist is study aggregation for interpretation," Lacy underscores. "That's what we were looking for, but we also wanted to simplify the ways we view clinical quality metrics. The workflow product offers both. So that brings us back again to reducing complexity. The BI tools [Change Healthcare Workflow Intelligence] support the rules-based engine for critical test result management. We were impressed with the ease and flexibility of the rules-based engine. It allowed for unique workflows within a sub-specialized practice like ours."

The Search for Solutions

"When CIRA embarked on a search for a single worklist solution, it was CIRA IT that was tasked with the challenge," Lacy says.

Lacy and McHenry did a lot of research and explored their options. They interviewed vendors and gathered details on features, functionalities, existing integrations, and cost. They considered working with current partners to reduce complexity. They discussed options in IT Committee meetings and narrowed the field.

Once finalists were identified, the team delved into limitations and implementation logistics, and they dug deeper into financials. They asked: *Will this 'pay' for itself from a clinical perspective, offering the ability to mine data appropriately and submit to our QCDRs? Will it allow for more effective assignment or efficient workflow for our radiologists? Is this going to save us money or allow us to scale back FTEs or integration costs? From an IT perspective, does this minimize effort or support, or eliminate manual processes?*

CIRA chose Change Healthcare Workflow Intelligence based on capabilities as well as tight, and proven, integration with their Change Healthcare (formerly McKesson) PACS, which accounts for approximately 60 percent of the volume of exams reported by the group. "While there's a standard for HL7 and DICOM, there's not a standard API out there to launch into other vendors' PACS," McHenry says. "We knew that launching Change Healthcare PACS was available out of the box. We also had verified they already had facilities launching from our two other most common PACS."

There also was a high degree of confidence that the selection would meet their needs because they had already seen it work. "Whereas other enterprise worklist vendors claimed they could do what we needed," McHenry says, "the worklist is already working with the other PACS, so we knew it would launch, open and close a study appropriately. For example, if you open up five studies, it opens and stacks them appropriately within the PACS."

With the must-haves covered, wheels really started to turn on defining how they'd put the worklist to work. "In a rules based engine the configuration is highly adaptable to any workflow," Lacy says. "The increased efficiencies, the study assignments, the integrated workflows for quality. We asked each other, 'How do we want to do this?' We can now build rules specific to facilities, sites, physician's slots or physicians. For example, creating a rule for a type of study during a certain time of day being assigned to a certain subspecialty group or specific physician. Our first focus was going to be interpretation, just seeing the big picture with a single worklist. After that it is going to be a more advanced study assignment and understanding of the physician's day."

 At CIRA, putting the patient first is always the primary goal. "Getting a study efficiently and effectively to the right physician," Lacy says, "not only creates a benefit in the quality of that report, but delivers other positive downstream effects in patient care and satisfaction. With a worklist launching into the facility's PACS, all the available priors are available for that physician. They don't need to wait or call one of our 'air traffic controllers' to find a patient and send over the prior studies. That extra step took them out of the workflow and the mindset of the exam. Now they can keep their eyes on the exams, focused on the

patient."

Physicians also benefit from consistent workflow. And from an IT perspective, a single worklist simplifies work in terms of people hours and tasks. "There is potential for unintentional rogue or repetitive process to cause inefficiencies when not automated. A rules based engine for assignment helps curb these concerns" Lacy says.

It's also less complex dealing with fewer vendors. When IT gets a report that the PACS, dictation, or orders aren't crossing, there's less complexity in the troubleshooting process. "Normalizing the workflow makes it a lot easier to determine where the failure is when someone calls and says, 'this is the study I'm having issues with,'" says Lacy, who can jump on the worklist, double-click on the study and see the problem. He also knows they're following a consistent process.

A key point that came to light as deployment began was that an enterprise worklist doesn't work unless you turn it on everywhere. But that goes counter to the way most IT projects are rolled out, site by site. This requires leadership from the radiology practice and the hospital partners to be on the same page, with validation and testing, go-lives and ongoing application updates. "There's no benefit until multiple sites are on the worklist and you start to aggregate all of your studies to the appropriate physicians," Lacy says. "So while it is challenging to roll out everywhere with the complexity of each facility, it will be worth it."

And none of this works without an interface engine that can normalize your data sets. If it's junk in, it's junk out. It was McHenry and his interface team's job to normalize incoming data. "There are over 200 interface connections coming into our interface engine, normalizing the data that is coming across becomes a delicate task. The HL7 standard exists, but every hospital and every RIS out there has a slightly different interpretation of the standard."

This all helps CIRA stay on the forefront of quality metrics too. "We've always had a focus on specific workflows for subspecialized groups, peer review, and ongoing professional physician evaluation," Lacy says. "We saw this as a way to normalize this data where we can. We want to be able to mine data appropriately and forward it on to any qualified clinical data registry (QCDR). It is about making information less complex to deal with by categorizing it appropriately."

Along the path to a single worklist, CIRA has succeeded in reducing the complexity of managing IT. They've interfaced systems, simplified data and reporting, improved physician workflow, and eliminated manual IT tasks. Patients, physicians and the practice at large are seeing the benefits. "Regarding data, it's time to bring it in, and present it in the best possible way for it's intended workflow," says Lacy.

Hospitals CIRA Services:

GRAHAM HOSPITAL Canton, Illinois

HSHS GOOD SHEPHERD Shelbyville, Illinois

HSHS ST. ANTHONY'S MEDICAL CENTER Effingham, Illinois

HSHS ST. ELIZABETH O'Fallon, Illinois

HSHS ST. FRANCIS HOSPITAL Litchfield, Illinois

HSHS ST. JOHN'S HOSPITAL Springfield, Illinois

HSHS ST. MARY'S HOSPITAL Decatur, Illinois

ILLINOIS VALLEY COMMUNITY HOSPITAL Peru, Illinois

OSF CENTER FOR BREAST HEALTH Peoria, Illinois

OSF CENTER FOR HEALTH Pekin, Illinois

OSF CENTER FOR HEALTH Streator, Illinois

OSF HOLY FAMILY MEDICAL CENTER Monmouth, Illinois

OSF SAINT ELIZABETH MEDICAL CENTER Ottawa, Illinois

OSF SAINT FRANCIS MEDICAL CENTER Peoria, Illinois

OSF SAINT JAMES – JOHN W. ALBRECHT MEDICAL CENTER Pontiac, Illinois

OSF SAINT LUKE MEDICAL CENTER Kewanee, Illinois

OSF SAINT MARY MEDICAL CENTER Galesburg, Illinois

OSF SAINT PAUL MEDICAL CENTER Mendota, Illinois

PERRY MEMORIAL HOSPITAL Princeton, Illinois

RED BUD REGIONAL HOSPITAL Red Bud, Illinois

RIVERSIDE MEDICAL CENTER Kankakee, Illinois

SPARTA COMMUNITY HOSPITAL Sparta, Illinois

ST. MARGARET'S HOSPITAL Spring Valley, Illinois

TOUCHETTE REGIONAL HOSPITAL Centreville, Illinois