How Collaborative Workflows Will Shape the Future of Healthcare
Leveraging technology to streamline imaging and IT workflows

Hospitals and health systems operate in a state of constant disruption, continually requiring them to pivot onto new work scenarios and revenue streams. Challenged to deliver high-quality care on declining margins, health organizations seek solutions that can efficiently streamline workflows for both clinicians and operational staff.

"As new technologies make their way into the workplace at an unprecedented pace, a redesign of workflow and a general improvement … of the tools implemented needs to continue," said Hal Wolf, President and CEO of the Healthcare Information and Management Systems Society (HIMSS) in *Transforming the Health Ecosystem: A Look Ahead*. To succeed, hospitals must "innovate the delivery of care with the focus on the patient, with integration of tools and technology that provide them efficiencies for their end-to-end healthcare needs when and where they now demand it."[1]

This white paper reviews three examples of the emerging innovations that Wolf describes:

- Creating patient-centric clinical workflows using visual collaboration tools

- Improving clinical and IT workflows by ensuring the privacy, quality, availability and security of imaging data, wherever it is accessed

- Creating greater clinician satisfaction and better patient outcomes by enabling remote radiology readings

These approaches collectively illustrate how collaboration can leverage technology to streamline clinical and IT workflows, according to Mike Sklar, Vice President of Healthcare, Americas, for Barco.

"Including the COVID-19 pandemic, the disruptions healthcare is experiencing will only be overcome through more innovative collaboration," he said. "As an industry, we should be looking for new ways to enhance clinical and operational value by re-engineering workflows and processes that benefit clinicians, operations and patients alike."

Visual collaboration = better communication

The adoption of electronic medical records in the U.S. over the past decade has been transformative. Hospital EMR adoption rates have grown from under 10% to 96%, while physician practice rates have increased to more than 80%.[2] But, an unanticipated consequence of this transformation has been a breakdown in clinical communication.

"One of the first things early EMRs did was stop people from talking," observed David Danhauer, MD, CMIO of Owensboro Health in western Kentucky. "Our communications dropped

like a rock because of our EMRs. That was a real disconnect and now we're trying to pull that back in and generate better communications around patient information."

Danhauer's experience is not unique, according to Sklar. In a rush to meet regulatory requirements and claim government incentives for EMR adoption, many organizations lacked the resources to redesign workflows that would leverage their technology investments.

Recognizing the problem, hospitals and clinics are introducing new workflows and tools to turn petabytes of data into actionable information, fostering greater collaboration among patient-care team members. Sklar pointed to the rising popularity of real-time data displays and video walls in team areas such as nursing stations, meeting spaces and hospital command centers as one example of this trend.

"It's not the technology," he pointed out. "It's the conversation the technology enables."

Owensboro Health instituted morning huddles as part of its Target Zero initiative to eliminate preventable medical errors. "We want everyone on a particular unit to have situational awareness of what is going on – discharges, an influx of surgeries, staffing and especially high-risk issues," Danhauer said. "The digital whiteboard is the center of that. So, the clinical team is looking at that patient board as they're going through this huddle, and communication is enhanced by the digital data points that are right in front of them."

Other hospitals are now extending this huddle approach to include offsite care team members. "Especially in the new hybrid healthcare workplace, there's a need for simple, wireless video conferencing that occurs at the click of a button," Sklar said. "Even after the pandemic, hospitals will need to connect in-house and remote meeting participants in an engaging and immersive experience."

Building collaboration into technology

Formal multidisciplinary clinical meetings such as the Tumor Board provide another example of the need for greater collaboration. While off-the-shelf video conference solutions might work in a pinch, Danhauer said these boards – which increasingly include both onsite and remote participants – benefit from meeting management technology that "bakes in" collaborative workflows to enhance essential human interactions.

"In a Tumor Board, you might bring together radiology, oncology, pathology, pharmacy, laboratory and perhaps support staff," he said. "Each member contributes, presenting PET scans, CTs, notes, clinical evidence. … And, all of this has to be coordinated so that everyone is working from the same set of facts.

"But, beyond that hard data, facilitating human interaction is critical," Danhauer continued. "The nuances – how strongly does this individual specialist feel about her recommendations? What's the patient's personality? – all of that is very important to be able to relay to each member of the team."

To meet these communication needs, the latest generation of remote meeting management software formats content for optimal viewing across all connected devices. "This enables both remote and onsite participants to view exactly the same content," Sklar explained. "And it often eliminates the need to transfer images and data between systems or sites."

Balancing security with availability

Another potential obstacle to fluid collaboration in healthcare is the ability of a system's IT team to ensure that every member of the clinical team, no matter where they are, can access the same patient data without sacrificing rock-solid quality assurance, security and privacy. In the past, IT staff and clinicians often found themselves at odds – the best data security policies and practices limited clinical flexibility and cooperation.

According to Danhauer, the challenge arises as a matter of differing priorities. The CIO may be concerned about whether his or her systems are all up and running, there are any latency issues, the newest patches are installed, whereas clinicians may be more concerned about how their patients are doing, where they are and how they can get to all of their patients in an efficient order.

But, as healthcare organizations innovate for the future, new workflows and tools can harmonize these disparate needs. "In general, it is possible to ensure the confidentiality, integrity and availability of data," said Lee Kim, Director, Privacy and Security/ Thought Advisory at HIMSS.

Sklar agreed. "Every user," he said, "whether in the hospital, at home or in another facility, must be fully supported and their tools must meet the same standards, compliance and quality requirements that onsite users expect."

For example, to make confident decisions, radiologists and other physicians need superior image quality with reliable, worry-free device calibration and quality assurance – regardless of their location. But, this expectation places an additional load on already overburdened IT resources.

Sklar suggested that one way to resolve this tension is to deploy web-based IT solutions that can remotely monitor devices and displays; detect security, compliance or quality issues in real-time; and automatically respond to them across the enterprise. This approach not only increases clinical flexibility, but it also enables IT to redeploy scarce resources more efficiently.
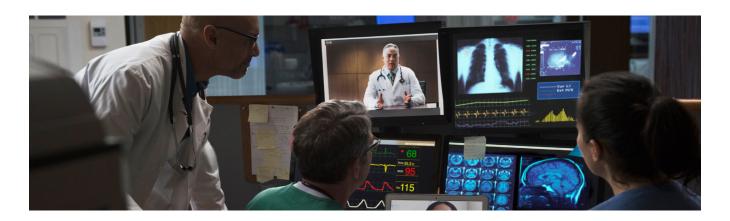
"In the radiology example, automated workflows can continuously calibrate displays," he explained. "The always-on approach ensures compliance, regularly updates software and can diagnose problems or security threats, regardless of the device location. Clinicians get their data when and where they need it, and IT can easily manage assets to optimize the value of the organization's investment."

Remote collaboration

The pandemic's clearest lesson is that the hospital's walls no longer limit effective, efficient care delivery. From the patient's perspective, it makes no difference whether the care team members are in the same room or spread across multiple time zones. What *does* matter is that they all have access to the same data and a common context to discuss treatment and care plans.

Kim said she expects remote collaboration tools to become increasingly valuable in the near future, as organizations are defined more by their capabilities than their locations.

"I started hearing about borderless hospitals and hospitals without walls about six years ago," she said. "The concept was fairly fuzzy at the time, but now I think it is, by and large, a reality. While certain roles benefit in terms of in-person collaboration, organizations such as the Veterans Administration have a lot of

staff working remotely already, even pre-COVID-19. I'm certain that if the case can be proven that money is actually saved, it will sway a lot of organizations to embrace the new normal."

Kim pointed to teleradiology as an early adopter of remote technologies. Once radiology transitioned from film to digital imaging, it was only a matter of time before technology provided workstation-quality rendering, resolution and display to radiologists at home or wherever they worked.

Danhauer agreed. He said Owensboro Health has benefited from having a member of its radiology team working remotely from his home in Hawaii. "He did the night reads for us because it worked out in terms of time zones," he said. "It was a win-win."

The approach actually results in a "win-win-win" scenario, Sklar added. Organizations can reduce onsite expense and repurpose valuable space; clinicians could have greater flexibility and control over their work environment, improving satisfaction; and patients benefit from access to wider clinical expertise.

"Remote reading allows radiologists to work more efficiently, ensures optimal working conditions and enables a flexible work schedule," Sklar said. "On-call, weekend and late-evening duties, for example, can be performed at home instead of at the hospital. With the millennial generation and digital natives entering the workforce, home reading is becoming a standard benefit in radiology hiring."

Home and remote work isn't restricted to radiology, of course. With each passing day, the value of frictionless, collaborative healthcare is becoming increasingly evident.

"In the past, a team approach was limited by location, data access and a lack of context," Sklar concluded. "But even before COVID-19 reached our shores, health systems were redesigning workflows to expand collaboration, reduce costs and improve clinical outcomes. If we are successful in this transformation, not only will we be better prepared for the next pandemic, but we will also provide patients with better, more affordable care."

To learn more about ways to streamline and make expertly calibrated imaging technologies available to all primary stakeholders in the healthcare setting, visit barco.com/healthcare.

References

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