Merge

MERGE WORKFLOW ORCHESTRATOR

Reimagine the imaging worklist

And redefine today's imaging experience

MERATIVE

The opportunity

Imaging organizations across the healthcare landscape are facing multiple challenges. High on the list are managing the growing volume and velocity of patient cases and combating physician burnout. To address those challenges, imaging leaders look for ways to optimize their workflow systems to best support clinical and operational processes—such as PACS for radiology and CVIS for cardiology, hemodynamics reporting tools, and RIS, among others. Additionally, the need for remote reading support, lower costs, guaranteed system uptime, and infallible security is driving many organizations to consider cloud-based solutions.

A large and overlooked opportunity to make a difference is to orchestrate workflows and thereby simplify diagnostic imaging processes. As systems and tools have accumulated over time in imaging organizations, so too has the diversity of worklists that play a role in managing the movement of people, health information, and imaging studies throughout the end-to-end imaging process.

– For the individual clinician, numerous problematic scenarios can be avoided with attention paid to user experience and workflow orchestration.

– Imaging teams – whether all radiologists or a mix of professionals in a care team – can experience significantly smoother interactions with a shared worklist that increases visibility and collaboration.

– For leaders of health enterprises, a truly unified, central worklist can offer insights into the caseloads across all sites, teams, and individual professionals. Those insights make it easier to discover potential cost savings, process efficiencies, quality improvements, or even new revenue streams.

For clinicians

Throughout their day, clinicians depend heavily on worklists to organize and drive their activity. When a case has been read and marked complete, they turn back to the worklist to select the next case. There is a constant back and forth between viewing the list and reading each case, which is frequently interrupted by calls, questions, searches for more information, or other distractions.

Rules engines can help with the prioritization of cases within each worklist, but when there are multiple, disconnected worklists, clinicians must maneuver between them at any given time. Overlay this reality onto the growing number and complexity of cases, and it's easy to understand the widespread job stress and burnout growing among imaging professionals today.

Stop the carousel ride

Scenario

One U.S. imaging organization nicknames their reading room "The Carousel" with monitors on desks around the room, each one dedicated to different imaging systems or study types which cannot be easily combined into one workstation. The radiologist on shift sits in a wheeled swivel chair to visit the monitors in rotation and work on the waiting queue of studies. It is up to that radiologist to determine the optimal order in which to review the studies – a decision that can be overwhelmed by numerous headwinds, including interruptions, fatigue, stress, and human error.

Reimagined

the imaging professional accesses and reads all cases, regardless of system or source, from a single worklist at a single station throughout the day, opening one after the other knowing that the logic of which one to read next has already been applied. Cases are correctly prioritized with urgency already factored in. In this case, a good worklist is one they never have to see, they can just open the next case and read.

For teams

Among teams of radiologists, equitable distribution of cases is an understandable concern. It is problematic when radiologists select certain studies to work on, for reasons of personal preference, remuneration, or other factors. This can create friction across a team, and compromise the optimal processing of the daily caseload, potentially impacting patient care.

A shared worklist that automates the distribution of all cases according to business rules can support transparency, reinforce equitability, utilize available resources effectively, and save time. Certainly, it reduces personal bias that may occur from manually distributing cases across a team.

End the manual distribution engine

Scenario

The head of radiology at a small urban hospital (500,000 cases annually) spends most of the day scanning the caseload and manually distributing cases to the reading physicians. They have prioritization engines within their existing systems, but they are unable to encompass all of their relevant factors: whether the reading physician is onsite or remote, their shift hours or specialization, the urgency of the cases, or if it is more efficient to use an overnight reading service for non-urgent cases.

Reimagined

Automate case distribution according to criteria and rules that can be configured to address the organization's many unique circumstances. Even better: over time, the system learns the patterns and preferences of the team with an AI-based engine so that it can automatically execute the distribution within defined business rules.

One view to rule them all

Scenario

An academic medical center responsible for a wide range of imaging case types has several hundred worklists set up to manage the activities of generalists, specialists, and subspecialists. The day-to-day challenge for the reading physicians is having to check multiple lists or blocks for the cases they have to read (e.g., "Global Stat", "Mammography," or "Routine Studies" blocks). Additionally, administrative complexity becomes acute for the PACS administrators when staff members change, or a workflow must be modified to include a change in process or a new diagnostic tool. Administering that many worklists is incredibly detailed and difficult to manage.
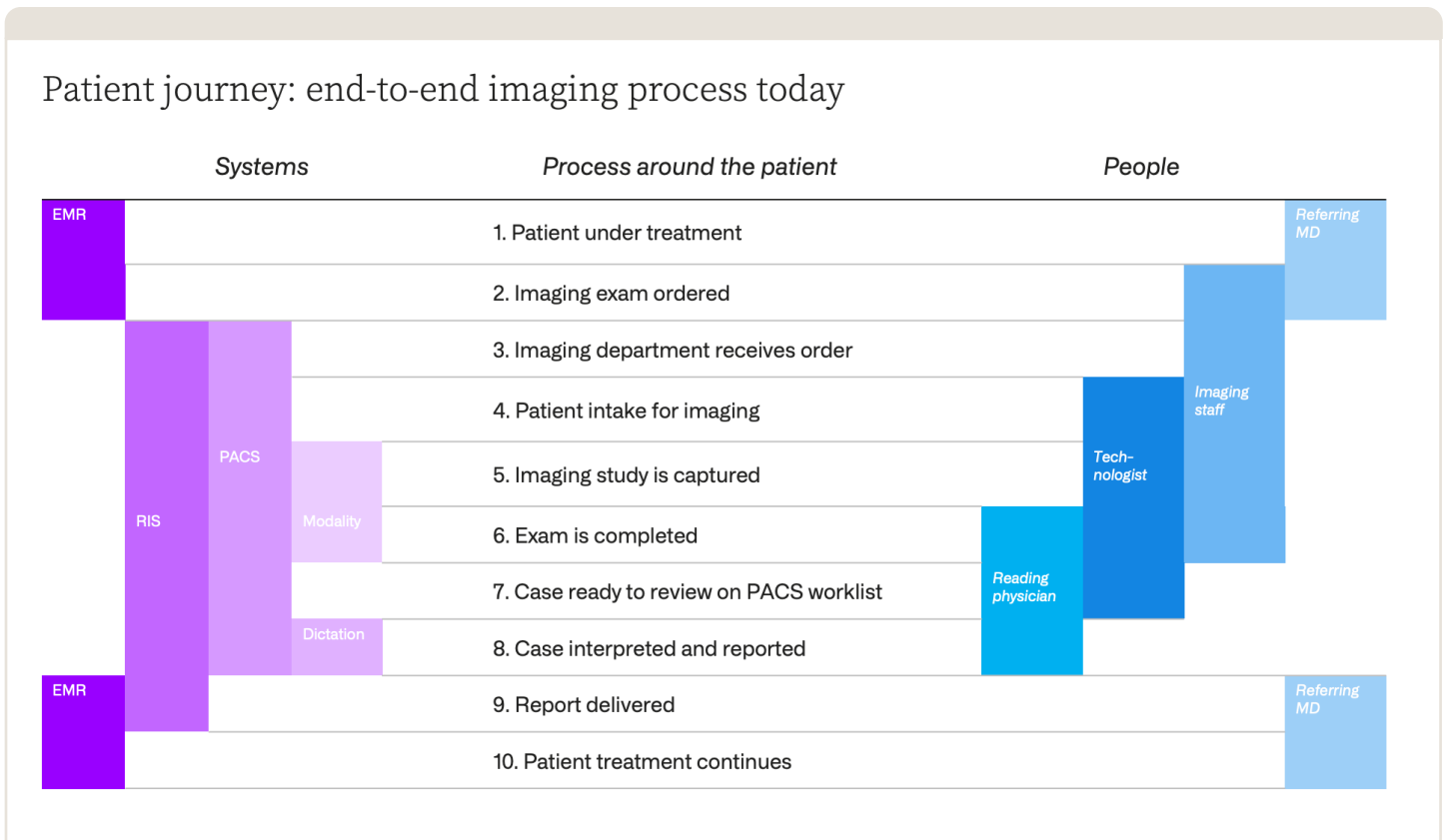
Reimagined

All the worklists are visible and accessible from one view – filterable, sortable, and stackable (collapsed and expanded for views of cases individually or in aggregate). This is good for the individual radiologists who needs to work on cases from several lists, as well as for staff who need a view across the organization, to help address potential process or capacity issues, quality improvements, or training needs.

For the enterprise

Across the patient imaging process end-to-end, various systems and professionals are involved at every phase. When there are disconnects between steps, the process becomes vulnerable to miscommunications, unnecessary delays, time-consuming manual efforts, or—in worst cases—mistakes or waste. These negative impacts can be felt at every level, affecting the patient, physician, care team, imaging department or healthcare provider enterprise wide.

For leaders looking across the enterprise, siloed systems obscure the view of patient experiences and cause blind spots to opportunities for improvement. The patient's journey starts with a physician's referral leading to an imaging appointment within hours or maybe not for months. In the time elapsed between referral and scan, what are the costs and the opportunities for improved efficiency, care interventions or additional revenue? In other cases, if the patient experience begins in an acute care scenario – such as an emergency department - then a disjointed process can add friction that can negatively affect actions and decisions across the care team.
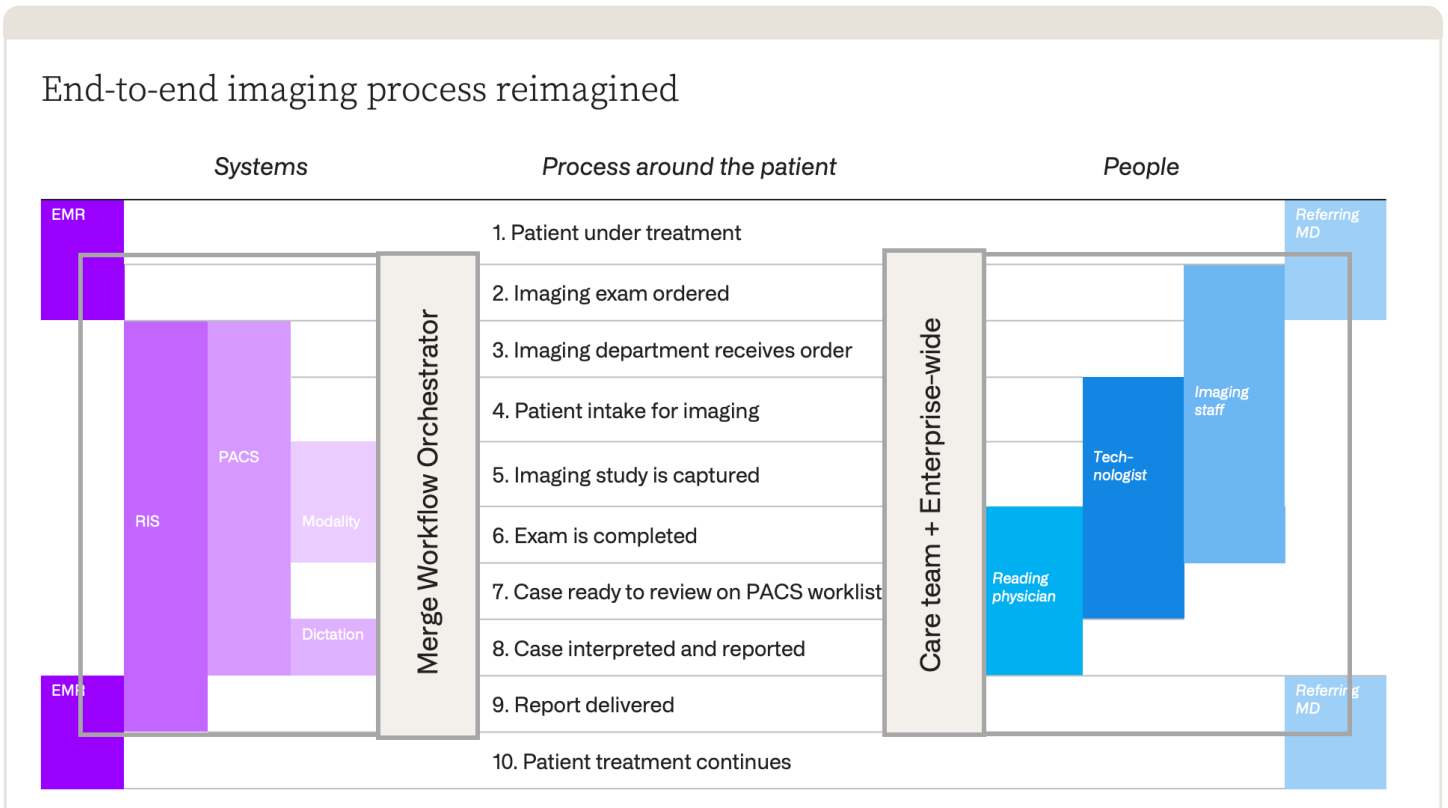
Opportunities to improve the patient's (and clinicians') experience would be clearer with a centralized aggregated view to the progress of all imaging cases – types, volumes, status, and processing speed. These valuable insights can expose opportunities for improvement.

Patient journey: end-to-end imaging process today

Systems	Process around the patient	People
EMR	1. Patient under treatment	Referring MD
	2. Imaging exam ordered	Imaging staff
	3. Imaging department receives order	
RIS / PACS	4. Patient intake for imaging	Technologist
Modality	5. Imaging study is captured	
	6. Exam is completed	Reading physician
	7. Case ready to review on PACS worklist	
Dictation	8. Case interpreted and reported	
EMR	9. Report delivered	Referring MD
	10. Patient treatment continues	

The solution:
Merge Workflow Orchestrator

Workflow tools must get easier to use—not harder. They must integrate smoothly and seamlessly into existing workflows, to present information in a useful way that improves the clinician's experience, as well as the performance of the broader imaging team and the organization at large. By working with different types of clients in acute and ambulatory settings over more than 30 years, with hundreds of PACS instances and enterprise imaging requirements, Merative has evolved the radiology worklist to an enterprise-level solution that can be used by anyone across the imaging continuum – within and outside of the organization.

Introducing the latest workflow innovation from Merative: Merge Workflow Orchestrator 2.0.

Merge Workflow Orchestrator is designed to consolidate, organize, and present the information clinicians need to efficiently manage caseloads, throughout the end-to-end imaging process and across the enterprise. It ensures that users can focus on reading, diagnosing, and reporting findings in the way that is most efficient for them, while eliminating disjointed worklists that impede productivity. It also supports broader team activities and enables organization-wide visibility to some factors that could impact the patient experience.

End-to-end imaging process reimagined

Systems				Process around the patient	People			
EMR				1. Patient under treatment				Referring MD
				2. Imaging exam ordered				
		PACS		3. Imaging department receives order			Imaging staff	
				4. Patient intake for imaging		Tech-nologist		
	RIS		Modality	5. Imaging study is captured				
				6. Exam is completed	Reading physician			
			Dictation	7. Case ready to review on PACS worklist				
				8. Case interpreted and reported				
EMR				9. Report delivered				Referring MD
				10. Patient treatment continues				

(Column between Systems and Process: **Merge Workflow Orchestrator**; Column between Process and People: **Care team + Enterprise-wide**)

Key features & benefits for clinicians

Prioritize user experience: Good workflow systems are based on user-centered design, and should be as intuitive as consumer mobile applications on smart devices. Merge Workflow Orchestrator was created with radiologists' experience in mind – to provide full functionality and a great user experience. It leverages common and familiar application elements (e.g., buttons, sliders, emojis, and more) and allows users to personalize aspects of the interface to meet their needs. The novel "card view" of the worklist offers a refreshing departure from traditional spreadsheet views, and users can toggle between the two with a single click. optimal order in which to review the studies – a decision that can be overwhelmed by numerous headwinds, including interruptions, fatigue, stress, and human error.

Remote reading: Built on scalable, extensible cloud-native technology, Merge Workflow Orchestrator is ideal for imaging organizations that have distributed reading and radiology workflows. It excels in supporting "anywhere reading" for all radiologists, whether local, remote, or in rotation between several locations.

Access to advanced diagnostic tools: Merge Workflow Orchestrator can help organizations by providing a single unifying cloud-based interface for potentially numerous applications across the organization. This includes many of the newer regulatory-cleared AI-based imaging diagnostic tools that have been introduced in the last few years, as well as the various PACS and other systems mentioned previously. Over time, when those underlying applications are upgraded or

replaced, for example in the scenario of moving to cloud-based systems, the burden of change management is significantly lower given that the organization is already established on Merge Workflow Orchestrator.

Dynamic worklist: Most worklists are based on paradigms of simple database filtering, periodic polling, or manual refresh to produce a spreadsheet-like view. Merge Workflow Orchestrator contains a patented, event-driven worklist controlled by a "subscription" engine that delivers information relevant to the patient's current health issue. The result is a multi-dimensional worklist—colorful, eye catching, and easy to navigate with instant updates. No more clicking and waiting for polling or refreshing.

AI-driven distribution engine: Built with a proprietary AI technology, Merge Workflow Orchestrator provides an automated distribution engine that "learns" from an organization's usage patterns over time, how to distribute caseloads equitably across radiologists, automatically and in compliance with business rules.

Imaging process end-to-end: Merge Workflow Orchestrator integrates with systems across every step of the patient's imaging journey, from the imaging order through to the final results. Now, it is possible for the whole journey of all patients to be tracked and displayed to every role in the patient journey – the referring provider, the radiology department front desk staff, the technologist, the radiologist, the radiology department manager, the PACS administrator, and the leadership in the practice, department, or health system.

The takeaway

In our daily lives, we expect technology to evolve and work for us in useful and interactive ways—not for us to have to adapt to technology's limitations. We develop affection for, and get satisfaction from, technologies that dependably and reliably increase our capabilities and our confidence. The same should be true in medical imaging technology--and it is with Merge Workflow Orchestrator.

To learn more, visit Merge Workflow Orchestrator or contact us.

About Merge

Merge medical imaging solutions, offered by Merative, combine intelligent, scalable imaging workflow tools with deep and broad expertise to help healthcare organizations improve their confidence in patient outcomes and optimize care delivery.

Learn more at merative.com/merge-imaging.

About Merative

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

Learn more at merative.com