Merge

MERGE WORKFLOW ORCHESTRATOR

# Reimagine the imaging worklist

And redefine today's imaging experience

34%

more efficient management of your reading physician's workload.[1]

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. This becomes even more important with imaging AI applications on the rise.
- **For 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 healthcare provider organizations**, a truly unified, central worklist can offer insights across the enterprise into 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.

Also, new tools added to the imaging workspace can offer valuable clinical insights and time-savings, but from the user's standpoint, they can also add complexity to existing imaging environments. 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.

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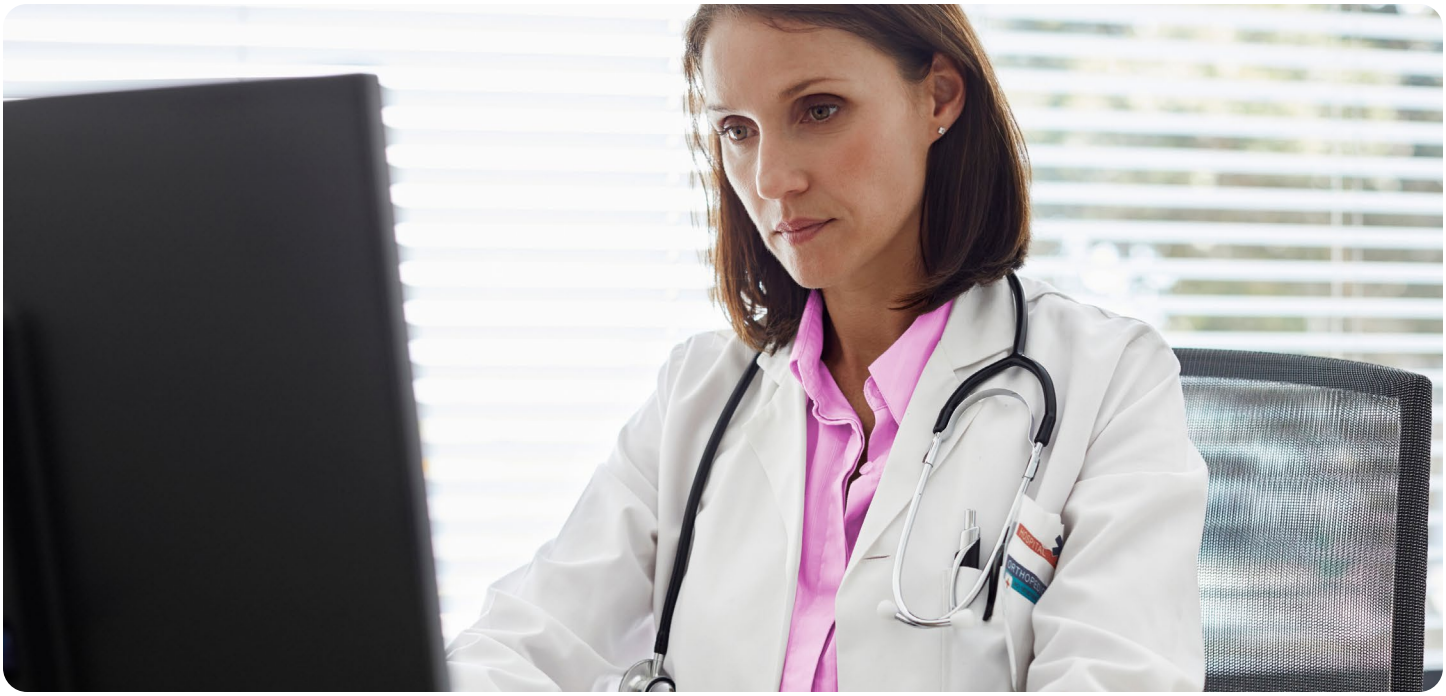
**Reimagined**

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. Another benefit is to **distribute cases more equitably** across the team and end the discontent from 'cherry picking' cases.

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**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.

## 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.

### 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.

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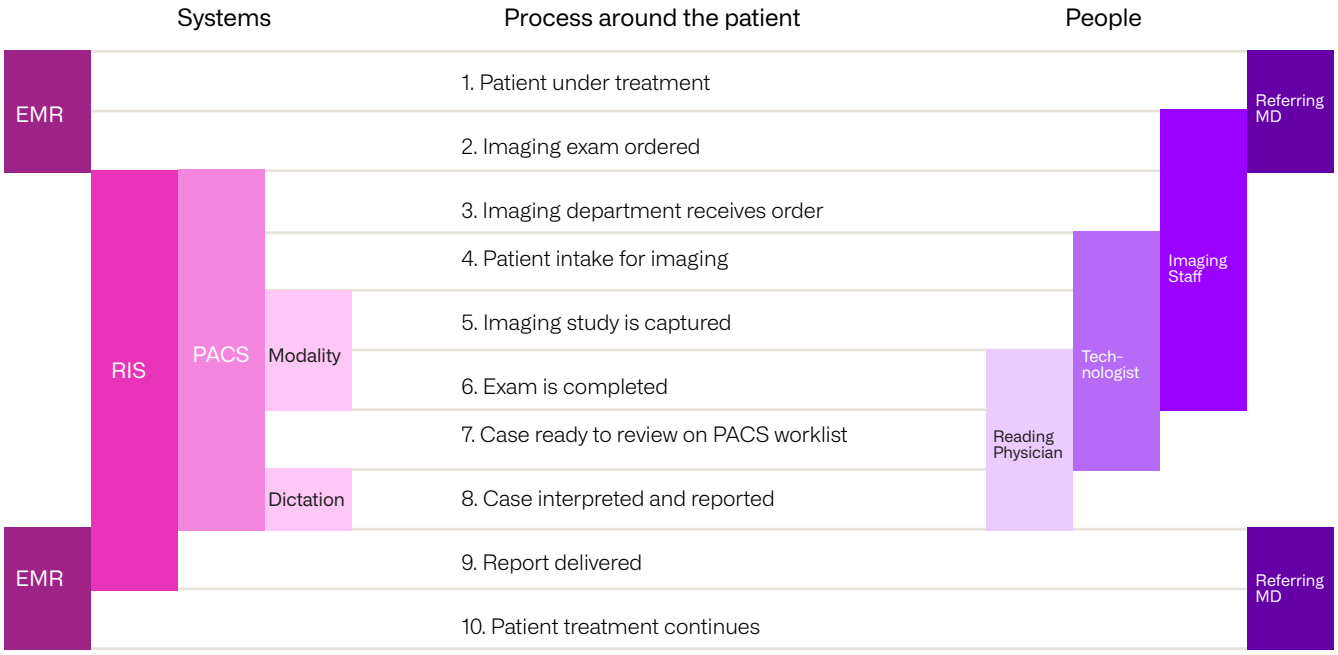
**Reimagined**

**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 need 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.

## Patient journey: end-to-end imaging process today




**Today, the process is managed via disconnected systems and manual handoff between stakeholders. The end-to-end imaging process can be cumbersome and error prone.**

# The solution: Merge Workflow Orchestrator

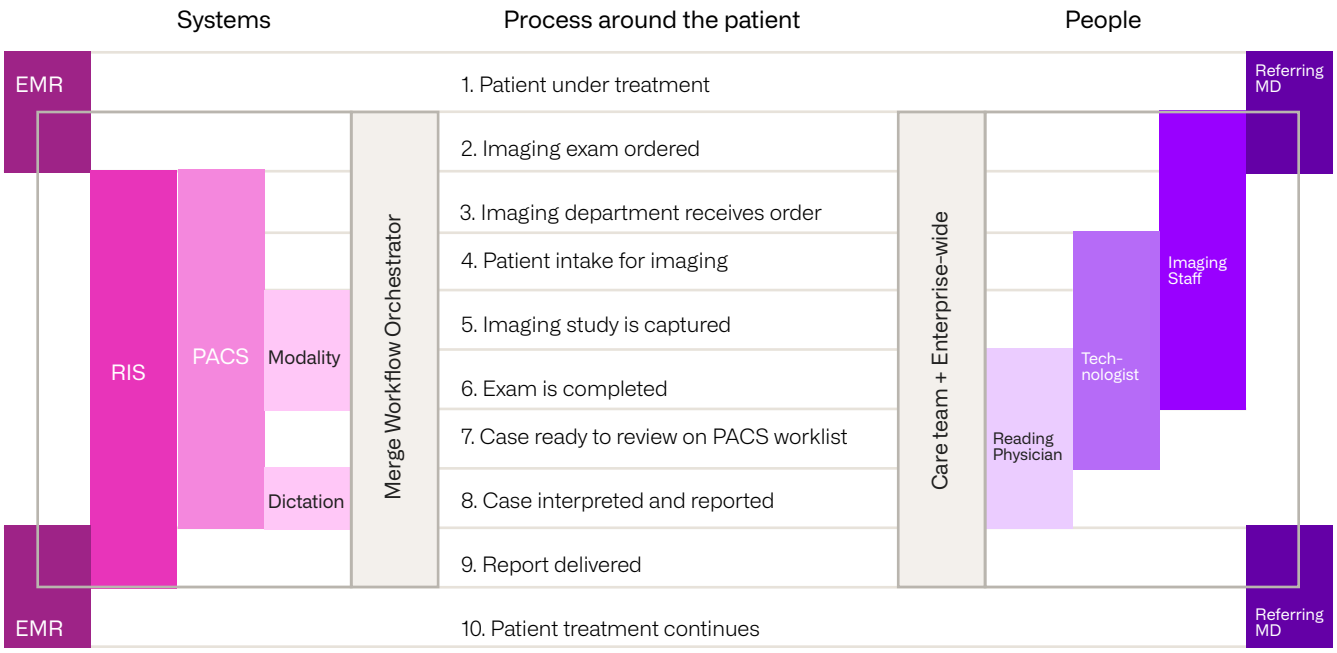
Workflow tools must get easier to use—not harder. They must integrate smoothly and seamlessly into existing workflows, to present information in a useful way that improves the clinician's experience, as well as the performance of the broader imaging team and the organization at large.

Merge has evolved the radiology worklist to an enterprise-level solution that can be used by anyone involved in imaging processes – within and outside the organization. This innovation is rooted in more than 30 years of experience working with a variety of clients across acute and ambulatory settings on hundreds of PACS and enterprise imaging projects, as well as nearly a decade of building, testing and marketing AI solutions.

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

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




34%

more equitable distribution of suites across the organization.[1]

Now the process can be truly patient-centered, where relevant data and workflow steps are unified into a seamless productive workspace for all stakeholders.

## 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.

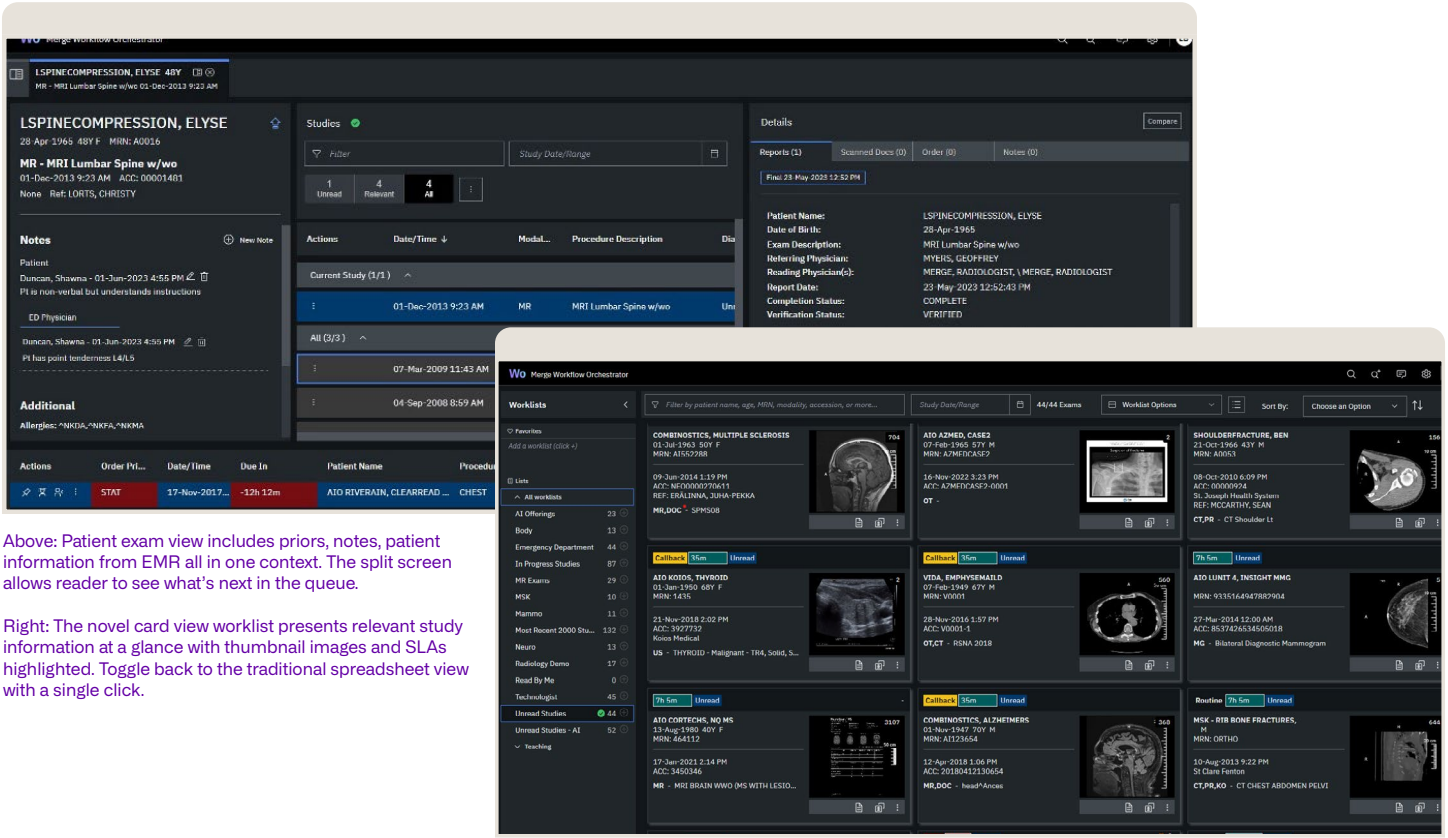
**Remote reading:** Built on scalable, extensible cloud-native technology, Merge Workflow Orchestrator is ideal for imaging organizations that have distributed reading and radiology workflows. It excels in supporting "anywhere reading" for all radiologists, whether local, remote, or in rotation between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

**Access to advanced diagnostic and AI-driven 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.

**Dynamic worklist**: Most worklists use simple database filtering, periodic polling and manual refresh to produce a spreadsheet view. By contrast, Merge Workflow Orchestrator uses a patented, event-driven worklist with the novel "Go to Next" mode that brings up the next study with a single click, together with relevant patient information alongside the study. It is colorful, eye-catching and easy to navigate with instant updates. No more 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.




Above: Patient exam view includes priors, notes, patient information from EMR all in one context. The split screen allows reader to see what's next in the queue.

Right: The novel card view worklist presents relevant study information at a glance with thumbnail images and SLAs highlighted. Toggle back to the traditional spreadsheet view with a single click.

# 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

Trusted by 6 of the 10 largest U.S. health systems, Merge by Merative empowers healthcare organizations with advanced medical imaging solutions to enhance workflows, optimize care delivery, and help improve patient outcomes. Merge's Imaging Suite, built on a cloud-native foundation, provides solutions for Vendor-Neutral Archive (VNA), PACS, Enterprise Image Viewing and Workflow Orchestration. Merge's portfolio also includes Best in KLAS Cardiology and Hemodynamic Monitoring, and Digital Pathology.

Learn more at merative.com/merge-imaging

## About Merative

Merative provides data, analytics, and software for healthcare and government social services. With focused innovation and deep expertise, Merative works with providers, employers, health plans, governments, and life sciences companies to drive real progress. Merative helps clients orient information and insights around the people they serve to improve decision-making and performance.

Learn more at merative.com

## Footnote

1 "An Intelligent Worklist for Equitable Study Distribution" October 2023. Bagley L., Park S.Y., Weatherbee C., Kis F., Sati M.

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