How Intelligent Workflow Can Alleviate CIOs' Top 4 Concerns

Radiology departments face the same challenges as the rest of the healthcare market; they must transition to an environment driven by outcomes and value. Yet, this challenge is compounded for imaging departments, since they're often perceived as a cost center instead of a profit center.

One factor that hampers their ability to change, is that their tools—mainly the PACS—were designed to help them read more studies faster. And while maintaining a high reading volume remains important, it's now accompanied by additional priorities including quality metrics, improved outcomes, patient satisfaction, and reduced costs.

In 2017, Change Healthcare conducted a survey of CHIME members*, where CIOs' responses reflected these challenges. When asked why they would invest in hospital IT, their top reasons were as follows:

Improve Workflow and Collaboration	88%
Improve Quality of Care and Patient Outcomes	79%
Optimize EMR Utilization	57%
Reduce Costs	37%
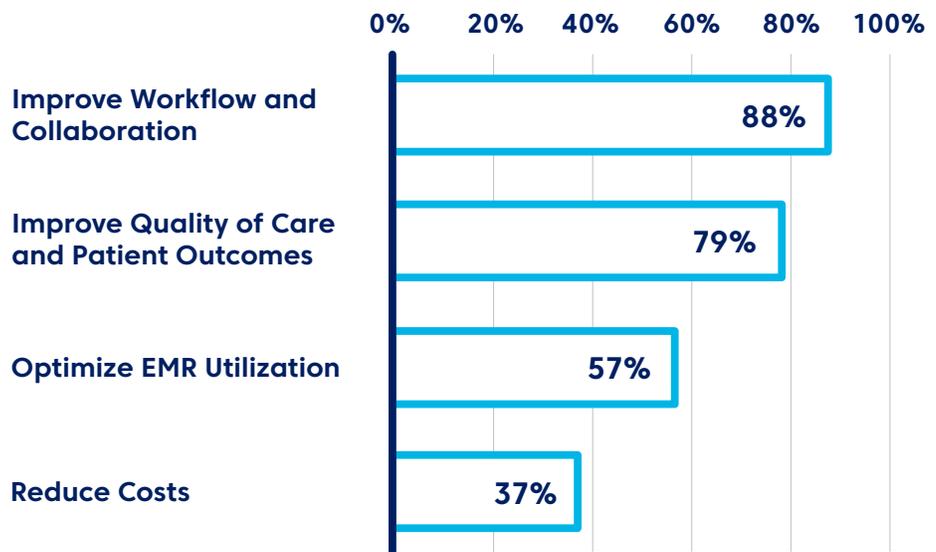
To achieve these goals, radiologists need to streamline their workflows through advanced, modern tools.

Specifically, they need the ability to:

- Communicate and collaborate with other departments and care providers
- Ensure the most urgent studies are read first by the most qualified sub-specialist
- Automate quality workflows for consistency and visibility
- View and analyze results through advanced analytics

This paper describes both best practices and examples of ways in which workflow can deliver tangible value in these four areas.

Read on to see how workflow automation and orchestration technology help health systems meet today's biggest challenges in their transition to value-based care and reimbursement.

1. Improving Workflow and Collaboration

While CIOs cited improvements to workflow and collaboration as the #1 reason to invest in imaging IT solutions, 41% said that it could still be easier to distribute, view, and manage images across their organization.
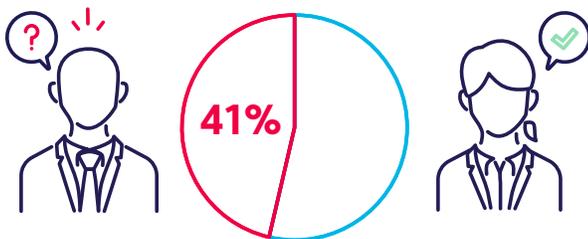
This response makes it clear that health systems still have work to do to achieve their goals.

Collaboration and image sharing plays a particularly important role in quality workflows which help departments meet regulatory requirements and are increasingly linked to reimbursement.

Critical Results communication is an area where patient care depends on cross-departmental and cross-facility collaboration. When this communication is integrated into a radiology

workflow, it benefits both the hospital and its referring physicians; radiologists can maintain an uninterrupted workflow and referring physicians get their results faster. After implementing an automated solution, one of our customers reduced their average turnaround time for Critical Results communication from 17 minutes to 10 minutes - a 40% improvement in only four months.[3]

Peer review is one example of an established quality workflow that's evolving to reflect a value-based care environment. Thought leaders in the industry are shifting their focus from random assignment that simply meets Joint Commission requirements, to peer learning, which is a catalyst for continuous improvement.

This type of workflow requires a sophisticated, automated system that facilitates collaboration between departments, sites and, roles. It also needs the ability to measure results so a health system can drive continuous improvement.

In response to a series of adverse events, Alberta Health Services, a Change Healthcare customer, implemented a sophisticated, anonymous peer-review solution. They designed a workflow that standardized the process across their 130 widely distributed sites. They also captured perspectives of radiologists and technologists to address quality from two angles: excellence of the images themselves, and quality of the resulting diagnostic reports. Their workflow allows them to select recently performed studies for review, so they can quickly capture discrepancies. And it's anonymous, so reviewers can flag studies without fear of judgment.

Since the program was implemented in October 2015, AHS has performed more than 90,000 technologist reviews and 26,000 radiologist reviews. But beyond the statistics lies a culture that's being transformed by quality. AHS used the resulting

data to identify areas where there are consistent challenges across their sites, and is addressing those challenges through educational materials and learning opportunities for its staff, so they can continue to improve quality, workflow and collaboration.

Marlene Stodgell O'Grady, Director of Quality at AHS, offers more proof that the program is working. She tells the story of one case, where an anonymous review resulted in an early diagnosis of a previously missed cancer. Due to the early detection, the patient's treatment pathway was profoundly changed. The leading-edge approach and automated workflow management meant the patient was being treated within days of finding the cancer.

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2. Improving Quality of Care and Patient Outcomes

The second priority for CIOs when investing in hospital IT is improving quality of care and patient outcomes.

A study from the National Institute of Health states that "[r]adiologists have traditionally been characterized as "doctor-to-doctor" consultants. [...] The traditional business model for radiology practices [...] must be transformed into a patient-centered model in which radiologists are reintegrated into direct patient care and imaging processes are reorganized around patients' needs and preferences."

And while about half the organizations surveyed by Change Healthcare already measure performance and contribution to patient care, a significant percentage still struggles to capture this metric.

With regard to your radiology department, do you measure performance and contribution to patient care?

Yes

No

17% Don't Measure

17% Don't Know

17% Want to Measure but Lack the Tools
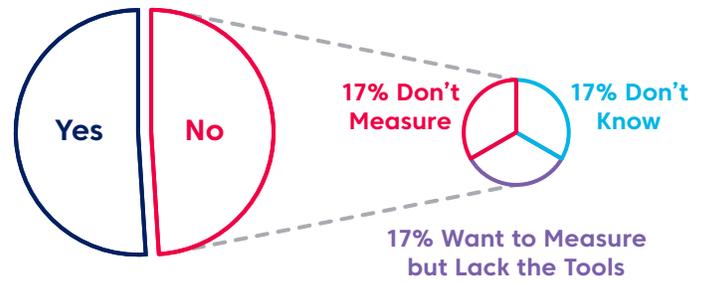
For any health system, improving ED flow and managing imaging performed on ICU patients can have a significant postive impact on patient care.

Improving collaboration between the ED and radiology is essential, since the number of complex imaging studies originating in the ED is on the rise.

If radiologists can read ED images faster and with more confidence, they can help minimize ED wait times. And, since longer wait times are linked to poor patient satisfaction, this workflow improvement can directly impact on revenue and patient satisfaction.

Often, the root cause of the problem is that ED physicians lack an effective way to prioritize their imaging requests. As described in research presented at RSNA 2017, a common problem is the overuse of the STAT designator.[1] When every study is identified as a priority, how does a radiologist know which one to read first? And without accurate data on turnaround times, how can radiologists know if they've improved?

One of our customers experienced this common scenario. Change Healthcare helped them build a workflow prioritization model that assessed each study coming from the ED and assigned it a priority based on a granular set of criteria. The solution automatically assigned each study, escalated it dynamically, and tracked until it was complete. In this case, workflow orchestration led to faster turnaround times not only in the ED, but also in the ICU and in Labor and Delivery – three key areas for any hospital.[3]

Results

Improvements in Average Turnaround Time

Labor and Delivery	Emergency Room	ICU
26%	**35%**	**50%**

A second focus area is the ICU. Patients located here are often categorized as inpatients, which makes it difficult to differentiate ICU studies from other, less clinically urgent, inpatient studies. But workflow orchestration solutions can help. For example, a customer of Change Healthcare used workflow orchestration to apply a granular prioritization model that segregated ICU studies. By isolating these cases and assigning them a high priority, they experienced dramatic improvements.

While the practice already maintained excellent average turnaround times for its ICU studies, using automatic workflow prioritization help them read outlier studies 75 minutes faster. Dr. Matthew Brady from the site emphasizes that, "Being able to differentiate ICU patients is crucial, because the quicker the critical care team has actionable information in their hands, the better."

3. Optimize EMR Utilization

The third area CIOs focus on when it comes to healthcare IT investment is optimizing their investment in the EMR. According to Jeffrey Mendel, a practicing radiologist, Senior Health and Policy Advisor for the international medical charity Partners In Health, and professor at Tufts Medical School, the main pain point with the EMR, is that most radiologists don't want to go anywhere near it. He says, "The EMR has tons of information that may or may not be useful but the information is almost always poorly integrated with the display of information in the PACS."

For radiologists, finding relevant data in the EMR is like searching for a needle in a haystack. And asking them to change their workflow to become familiar with a complicated system will only slow them down.

But with intelligently synthesized information at their fingertips, radiologists can provide more useful impressions and recommendations, and cement their role as valuable members of the care team.

Intelligent workflow solutions can integrate key information from the EMR with a radiologists' normal workflow. Data at the point of care allows radiologists to use it to gain insight.

In a focused pilot project, one of our customers integrated EMR data into their radiology workflow for complex imaging cases, and found that access to this data added value to their process 24% of the time. They also produced the following results[3]:

In 20% of cases, the data saved them time

In 21% of cases, it improved diagnostic confidence

In 8% of cases, it changed patient recommendations

Not only does the right information help radiologists provide more accurate interpretations and avoid unnecessary, costly procedures, it offers potential for significant cost savings. According to Dr. Mendel, "Any time you can shorten the workup and be more specific in your diagnosis, you're not only going to take a load off the caring clinicians, off the nurses, and off the hospital system, you can also reduce avoidable downstream expenses."

4. Reduce Costs

The fourth priority for CIOs investing in healthcare IT is cost reduction. Today's health systems need to maximize reimbursement under new payment models. Since volume is no longer a guaranteed predictor of higher revenues, health systems want to improve productivity and efficiency. And technology solutions can often help uncover and maximize improvements in these areas.

In fact, analysis from McKinsey & Company in November 2016 finds providers could achieve 3-5% improvement in operational costs from clinical workforce management and 1-2% from physician workforce excellence.[2]

Clinical workforce management applies across the health system, but one area prime for improvement is reducing length of stay.

A study published in September 2016 examined more than 25,000 emergency admissions at St. James Hospital in Dublin, Ireland, and showed that: "[L]onger hospital lengths of stay were shown to be related to delays in imaging time. Increased delays in CT and MRI were shown to be associated with increased hospital episode costs."

Even a 50% improvement in missed cases is equal to 1000 fewer overnight stays and potential savings of $2 million.

Here's an example: A hospital sees 10,000 patients per year who could be discharged the same day if their ultrasound studies are read by 2 p.m. Missing 20% of these studies results in 2,000 unnecessary overnight stays. Assume each stay costs the hospital $2,000, and you have a cost of $4 million, along with a significant impact on patient satisfaction.*

A workflow orchestration solution can apply intelligent prioritization that assigns and escalates studies based on discharge date. Cases automatically move up the list as they become more urgent; if they're not read within a defined timeframe, the solution sends automatic notifications to ensure they don't slip through the cracks. The result is reduced costs. Even a 50% improvement in missed cases in the previous scenario is equal to 1,000 fewer overnight stays and a potential savings of $2 million.

Another way in which intelligent workflow can help health systems improve clinical workforce management is through a unified enterprise worklist that allows a health system to ensure its teams are performing the most appropriate tasks for their skill set.

Moving away from multiple worklists can help health systems realize benefits in subspecialist use, efficiency and productivity. Rules-based assignment prioritizes worklists based on modality and department and assigns cases to the right radiologist.

After implementing an enterprise-wide worklist, Roper Radiologists PA, a private radiology practice in South Carolina, achieved significant improvements in efficiency and productivity:

- 56% fewer ED cases take longer than 45 minutes to read
- 75-minute improvement in average TAT for outlier studies in the ICU
- 26% less work done after 5 p.m.

Consistent workflow automation across an enterprise can also make it easier for health systems to restructure since it lets them implement workflows across facilities and measure results to see what's working and what might still need to change.

Intelligent workflow saves time, effort, and cost for the entire enterprise.
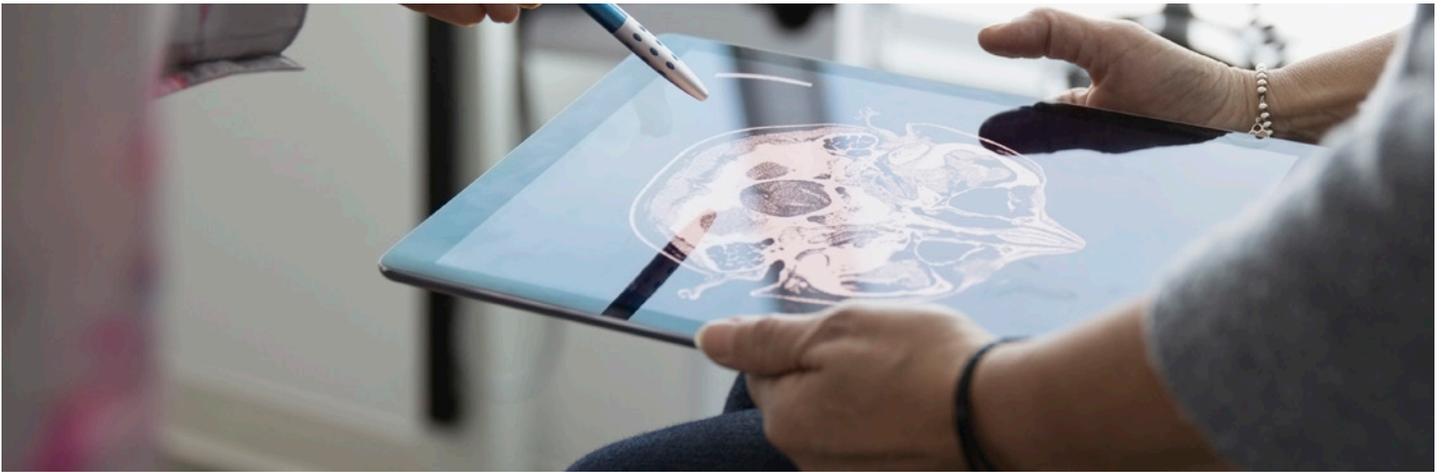
Revolutionize Your Imaging Operations

As radiology departments continue their transition to a value-based environment, they need technology solutions that reflect their new needs.

Their existing tools are essential, but they also need to find new tools that help them manage their workflow and align it with their hospital's goals. Technology that helps them measure and define benchmarks in quality and patient care can help them demonstrate their contributions to patient care.

As CIOs continue to evaluate which healthcare IT solutions will help them meet their goals, they should consider workflow solutions on equal footing with other investments. As clearly demonstrated, workflow orchestration can help health systems:

1. Improve workflow and collaboration
2. Improve quality of care and patient outcomes
3. Optimize EMR utilization
4. Reduce costs

While every organization is different, enterprises can use workflow orchestration to transform. These solutions remove the constraints associated with traditional PACS worklists and filters, and help health systems of all sizes align their goals for patient health with their goals for business health.

Change Healthcare has deep expertise in both clinical healthcare and technology. It is our mission to bridge the gap between IT and clinicians with solutions that help both groups meet their needs.

To find out more about our deep domain expertise in workflow optimization, contact us or visit www.changehealthcare.com.

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[1]   http://www.radiologybusiness.com/topics/care-delivery/rsna-2017-overuse-%E2%80%98stat%E2%80%99-designation-slows-mri-workflow-causes-confusion

[2]   http://healthcare.mckinsey.com/next-imperatives-us-healthcare

[3]   All results based on customer-collected data.

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About Change Healthcare

Change Healthcare is inspiring a better healthcare system. Working alongside our customers and partners, we leverage our software and analytics, network solutions and technology-enabled services to help them improve efficiency, reduce costs, increase cash flow, and more effectively manage complex workflows. Together, we are accelerating the journey toward improved lives and healthier communities.

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