



# Rethinking workflow, reimagining care

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*Making the simple complicated is commonplace; making the complicated simple, awesomely simple, that's creativity.*

—Charles Mingus

The practice of healthcare today can be summarized into four words: doing more with less. There is abject complexity in seemingly everything, from legislation to software to billing codes. Yet, there is a dire need to deal effectively with key challenges, such as increasing costs, declining reimbursements and changing care models as our industry moves from volume-based to value-based care processes—and the accompanying shift in focus from quantity to quality. The key to addressing these challenges is to ensure that we focus on the big picture while enabling optimum functionality across key variables in the delivery of care. This, in more ways than one, comes down to workflow: not just optimizing it, but rethinking it and reimagining care end to end.

## Reimagining imaging

Imaging is central to care processes throughout healthcare. Imaging has also evolved from being a departmental solution to an enterprise-wide asset,<sup>1</sup> as CIOs deal with the realities of not just managing stand-alone solutions such as radiology information systems or laboratory information systems, but also strive to garner efficiencies of scale across the various “ologies” (radiology, cardiology, pathology, etc.) by

leveraging advances in enterprise content management, cloud-based technologies and mobility. Healthcare organizations have moved in large part from analog to digital and are actively working to maximize their investments in these clinical information systems.

Core to realizing these efficiencies across the enterprise, however, is the ability to reimagine the workflow and to rethink how imaging plays into the overall objectives of the healthcare system. The goal of imaging is not just to get to a diagnosis. It is to better the overall outcomes for the patient at the other end of the diagnostic workstation. To truly move from an interpretation-centric workflow to an outcomes-centric reality, we need to have a much more cohesive set of solutions and incentives across care teams well beyond the traditional components of the imaging workflow. The focus, hence, needs to be on a wider catchment of players, spanning patients, schedulers, technologists, imagers, referring clinicians and specialists, all the way to extended-care teams—and back to patients.

## A symphony, not an individual player

The reality of optimizing imaging workflow is that the focus needs to shift from any single entity, be it a system (eg, PACS, RIS), a modality (eg, CT, ultrasound) or a person (eg, scheduler, technologist), to the sum of all parts working together, so that the interdependencies across these core components are contributing to overall desired outcomes.

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To take this analogy a bit further, the key role then for us as we look to optimize healthcare workflow, becomes that of “conductor;” the brains behind that conductor could be advanced analytics. Leveraging the rich flow of data across the imaging value chain<sup>2</sup> that can be fed into this centralized advanced analytics engine, our goal as conductor would then be to not just create dashboards to help visualize key metrics of the workflow, but to generate useful insights and actionable interventions to help optimize the overall flow across the multiple components to the care pathway. The engine would essentially do what any single person in any defined part of the workflow would not be able to do: keep constant vigilance over the entire continuum, and to continually analyze the interdependencies of any action to the overall outcomes.

### **Eliminating bottlenecks**

When analyzing workflows across complex processes, “black belts” in the Lean Six Sigma methodologies as well as experts in movements such as “total quality management” and “business process reengineering” try to identify key bottlenecks that impede overall progress and often result in a compounding effect on backlog and inefficiencies, dramatically affecting components

either downstream or upstream. However, if we are able to effectively analyze these bottlenecks and the dependencies and actions across the value chain, these bottlenecks need not become the “lowest common denominator” for the overall efficiency equation. Indeed, one can leverage best practices and protocols not just to reduce variability, but also to contextualize interventions and actions to lift the overall flow to the level of the “highest common denominator.” Protocol and process optimization then becomes replicable—and more manageable—across settings.

Healthcare today is part of the knowledge economy, where data is currency but knowledge is power. As we further embrace quality and incentivize value, we need to subject ourselves to further scrutiny, optimization and process reengineering. Industries outside of healthcare, such as manufacturing, have seen tremendous leaps forward by being able to reimagine process flows, often by leveraging workflow management systems (WfMS). A workflow management system<sup>3</sup> is a software system for the set-up, performance and monitoring of a defined sequence of tasks arranged as a workflow. Ideally, we need to leverage key capabilities and principles of these systems and embed them into the core systems we use to deliver care. Planning, scheduling, resource allocation, flow control, process modeling and outcomes measurement are key attributes that must be embraced in healthcare workflow redesign. Furthermore, innovative, collaborative and adaptive

workflows needed to address the most dynamic of healthcare delivery models need an immense focus on the science of human-machine interaction and human-computer interfaces. Better data analysis coupled with advanced information visualization that acknowledges the nuances of behavior change is key to winning in the knowledge economy.

### Improving usability

With respect to healthcare information systems, ease of use may be invisible, but its absence sure isn't. Better usability is at the heart of optimized workflows. But achieving better usability should not merely be a process-optimization task at the tail end of system deployments. Rather, usability should be a core focus as systems and processes are being designed at the outset. The principles of design thinking dictate that end users be engaged early, with a focus on empathy as a guiding principle.

Context is king, but context, as we know, often is also not static or simple. Workflow redesign that takes into account this reality of context stands a chance to identify, analyze and eliminate non-value added components from any workflow, and conversely, maximize value-added components across the entire care process. Better usability is achieved when workflow analysis is focused on reducing unnecessary variations, error-prone manual processes and clumsy workarounds, and replacing them with dynamic, adaptive prioritization capabilities, streamlined tasks and integrated communication and transparency tools.

### Succeeding beyond technology

Technology is merely an enabler of better care. When healthcare organizations were asked

for the top reasons that resulted in IT project failures,<sup>4</sup> the top three reasons were 1) A limited role for end users; 2) a lack of executive support; and 3) a lack of re-engineering of current processes.

Engaging end users in workflow redesign is perhaps the single most effective way not just to get buy in, but also to garner key insights into existing inefficiencies, core functionality requirements and integration and interface challenges. In-depth workflow analysis and redesign can also be a highly effective way to entice executive-level buy-in and championing. A real evaluation of workflow should have no sacred cows. Openness to re-engineering current processes and rethinking established notions is key to success beyond the technologies being implemented and optimized.

Rethinking workflow is key to bringing out the best of clinical information systems and technologies, both old and new, and to realizing the true return on investment of these very technologies. Workflow analysis, optimization and reengineering can organize complex processes into usable and more efficient workflows that can empower end users to get at better outcomes and truly help humanize the care experience.

### REFERENCES

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