MEDICOM

WHITE PAPER

From Image Exchange to Enterprise Interoperability

Why Point-to-Point Image Exchange is No Longer Enough for Modern Health Systems

The Strategic Imperative for True Interoperability

In healthcare, interoperability is the foundational yet often overlooked engine driving modern care. It’s the invisible force that allows a prescription to be sent to a pharmacy, a lab result to appear in a patient's chart, and a primary care physician to see a specialist's notes. Without it, health systems would revert to a disconnected world of paper, faxes, and phones.

Nowhere is the challenge and opportunity of interoperability more acute than in medical imaging. With imaging data making up the vast majority of all healthcare data and growing at a staggering rate annually[1], the stakes are incredibly high. For decades, standards like DICOM and HL7 have served as the bedrock of digital radiology, successfully guiding the industry beyond physical film in what was Phase One of its digital evolution.

But as every healthcare leader knows, having standards is not the same as having seamless workflows. Different vendors can interpret and apply these standards in different, often incompatible ways. This gap between standardized data and functional, automated workflow is where basic "image exchange" operates. It was a crucial first step, but it was never designed to support the complex, scalable, and intelligent orchestration that today's enterprise requires.

This paper serves as a leadership guide to the next evolution: moving beyond the limitations of basic exchange to achieve true imaging interoperability. We will explore the critical differences between these two concepts and outline a clear path to a more automated, efficient, and scalable future for your health system.

What is Imaging Interoperability? From Available to Actionable.

For years, the industry has focused on making images available. Interoperability elevates that goal by making them instantly actionable.

It is the ability to **automatically and securely orchestrate** imaging data across disparate systems and workflows. This ensures it appears where it's needed, when it's needed, with full clinical context, and without human intervention.

An Analogy: The Evolution of Mail

Image Exchange is like the postal service. It's a reliable system for sending a package from Point A to Point B. You can send a CD or a digital file, but someone has to package it, address it, send it, receive it, and then figure out what to do with it. The process is a manual, one-off transaction.

Imaging Interoperability is like a modern logistics platform. It knows who you are, what you need, and where you are. It automatically routes the right package to the right person at the right time, notifies them of its arrival, and places it exactly where they expect it. Everything is based on data and predefined rules.

While technical standards like DICOM and HL7 provide the building blocks, true interoperability focuses on the strategic outcome. It achieves the seamless integration of imaging into the fabric of patient care.

Interoperability Is the Evolution, Image Exchange Was Just the Start

Image exchange was a crucial first step that solved the problem of point-to-point sharing. But as health systems grow in complexity, its limitations become clear. Interoperability addresses these limitations directly. It is not a replacement for exchange but its natural and necessary evolution.

IMAGE EXCHANGE (THE PAST)	IMAGING INTEROPERABILITY (THE NOW)
Episodic & Reactive: A user manually initiates a one-time transfer.	**Continuous & Proactive:** The system automatically anticipates and fulfills imaging needs.
Manual Workflows: Requires staff to upload, download, and reconcile data.	**Intelligent Automation:** Rules-based logic routes data without human touch.
Siloed Access: Clinicians work in separate portals, outside the patient record.	**Integrated Experience:** Imaging is viewed "in-context" directly within the native EHR workflow.
Difficult to Scale: Each new connection or workflow is a separate, manual project.	**Enterprise-Wide Governance:** A single platform scales across all departments, facilities, and partners.

From a Linear Task to a Connected Ecosystem

The distinction between image exchange and interoperability becomes clearest when visualized. Basic image exchange is a linear, one-off task burdened by manual steps, multiple systems, and friction. It is fundamentally reactive.

True interoperability creates a connected, intelligent ecosystem. It is a centralized, automated platform that orchestrates data flow between all stakeholders proactively and seamlessly.

Image Exchange:
A Manual, Point-to-Point Task

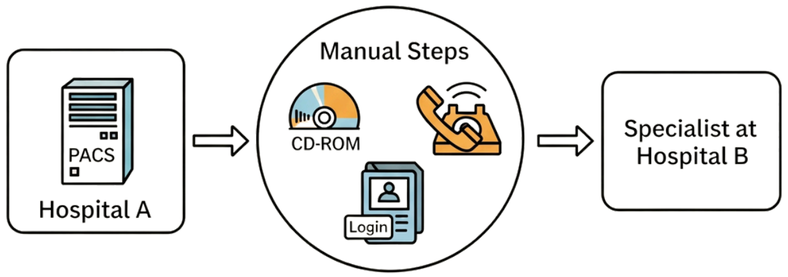
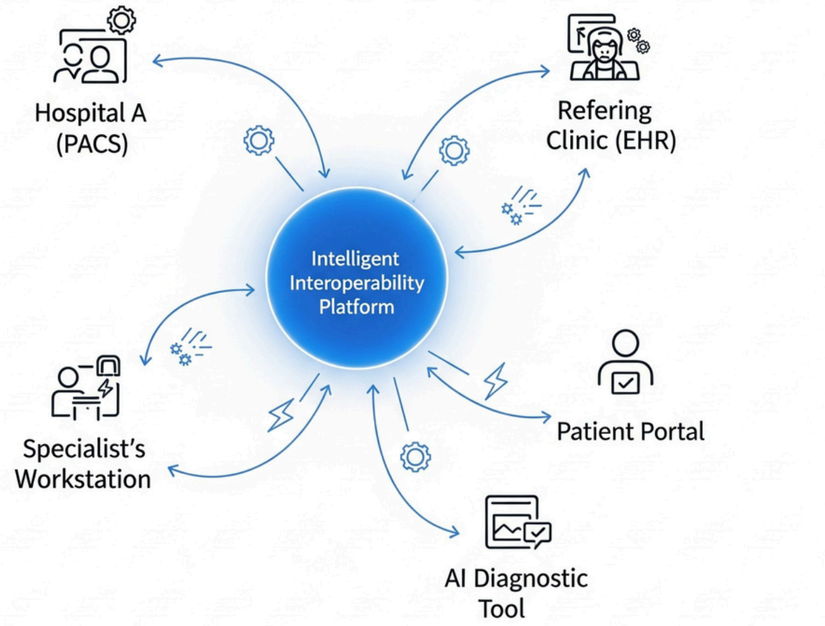


Image Interoperability:
An Automated, Connected Ecosystem



What True Imaging Interoperability Enables

Seamless Clinical Workflows

Imaging arrives automatically within the EHR, linked to the correct patient record. Providers gain instant, zero-click access without toggling between systems.

For Example: A patient is referred to your oncologist. The interoperability platform sees the appointment in the EHR, automatically queries the referring hospital for recent PET/CT scans, and ensures they are in the patient's chart for the oncologist to review a day before the visit.

Radical Scalability

A single, centralized platform governs routing and security across all departments, hospitals, and care settings, eliminating the need for brittle, one-off integrations.

For Example: When your health system acquires a new regional hospital, its imaging data is connected to your enterprise network in days, not months. Their providers immediately gain access to system-wide resources, and your providers can see their imaging data, accelerating the value of the acquisition.

Universal Connectivity

Unlike "walled garden" platforms that operate within a closed network, true interoperability provides the freedom to connect to any data source on demand.

For Example: When a patient's imaging history is split between your network and a competing one, a "walled garden" platform fails. A truly interoperable platform connects to both automatically, retrieving a complete imaging history so the provider can make timely, informed decisions.

Who Benefits from Imaging Interoperability?

Stakeholder	Without Interoperability	With Interoperability
Clinicians	Wasting time in portals and contributing to the two hours of administrative work for every one hour of patient care[3].	Imaging is auto-routed to the EHR, instantly available in full clinical context.
IT Teams	Juggling multiple point solutions, managing complex integrations, and high support ticket volume.	A simplified, unified architecture with centralized governance and fewer support tickets.
Operations	Inconsistent access and broken workflows across the system with a lack of enterprise oversight.	Standardized, automated workflows and complete visibility across the care network.
Patients	Suffering from repeat scans, which contribute to the $12 billion spent annually on unnecessary imaging[4], and other care delays.	Faster diagnoses, less radiation exposure, and a seamless, modern care experience.

CASE STUDY

bellin health

“I am really looking forward to further automation... and the impact it will have on our bottomline, and more importantly on our patient care."

— Jeff Hoeksema, Director: Lab & Imaging

- 130% increase in electronic exchanges
- Eliminated hours of daily manual work

Building Toward Interoperability: Key Questions for Leadership

When evaluating imaging solutions, we encourage you to move beyond the feature list and ask strategic questions:

- **EHR Integration:** Can it deliver imaging directly into our EHR using modern standards like SMART on FHIR, providing zero-click access for clinicians?
- **Universal Connectivity:** Is the platform truly network-agnostic, allowing us to connect seamlessly with any partner, regardless of their existing network affiliations?
- **Automation:** Does it automate routing based on clinical context, for example, a scheduled appointment, and not just user commands?
- **Scalability:** Is it an enterprise-grade platform designed to scale across all our departments, hospitals, and partners under a single governance model?
- **Use Case Support:** Can it support our diagnostic, research, operational, and patient-centered workflows from one platform?

Interoperability Is the Strategy

Image exchange solved yesterday's problem of sharing. Today's healthcare landscape demands imaging workflows that are connected, automated, and intelligent at scale.

More than a technical capability, interoperability serves as the strategic foundation for achieving top executive priorities, including driving operational efficiency[5]. Health systems that embrace it are better positioned to **reduce costs, improve provider and patient experiences, and innovate faster.**

Are you still just exchanging images, or are you ready to truly interoperate?

How Medicom Delivers True Interoperability

Medicom was built to answer that question. We are an enterprise imaging platform designed for interoperability.

While basic exchange solves a tactical problem, Medicom solves a strategic one: how to make imaging access intelligent, automated, and enterprise-wide. Our platform connects the systems, sites, and people involved in imaging, automates access, and orchestrates exchange across the care continuum—from hospitals to home to research. Whether it's surfacing outside scans to a specialist, automating image delivery to a stroke team, or helping patients view their own images, Medicom ensures imaging is available, accessible, and embedded into the workflows that matter.

If your goal is true interoperability, Medicom is your strategic platform.

2,600

Medicom-Enabled Sites

4.5MM

Annual Transfers

99.8%

Customer Retention

About Medicom

Medicom is a health technology company on a mission to create a more connected, efficient, and patient-centric healthcare ecosystem. We believe that seamless data access is foundational to modern care and that patient information should move as freely and securely as the patient themselves.

Our enterprise imaging interoperability platform was purpose-built to solve the complex challenges of medical data exchange. Unlike solutions that operate within a closed network, our network-agnostic platform acts as a universal translator. It empowers health systems to eliminate data silos and automate workflows by connecting any hospital, imaging center, or specialty clinic, regardless of their existing technology vendors or network affiliations.

Trusted by leading academic medical centers, health systems, and specialty groups across the country, Medicom facilitates millions of secure clinical transactions anually. We are dedicated to providing the strategic platform that allows our partners to reduce operational costs, accelerate patient care, and build a truly connected care experience.

Ready to move beyond exchange?

Learn how Medicom can help your organization build a foundation for true interoperability.

Visit us online or book a demo at www.medicom.us.

Sources

[1] Various sources, including RBC Capital Markets and Dell EMC, project the healthcare data growth rate (CAGR) to be between 25-36%.

[2] Various sources, including the Council for Affordable Quality Healthcare (CAQH) and the West Health Institute, estimate the cost of poor interoperability and administrative waste to be in the tens of billions annually.

[3] Sinsky, C. A., et al. "Allocation of Physician Time in Ambulatory Practice: A Time and Motion Study in 4 Specialties." Annals of Internal Medicine, 2016.

[4] Figure cited in multiple publications, including the Journal of the American College of Radiology and analyses by the Harvey L. Neiman Health Policy Institute regarding unnecessary imaging.

[5] Various industry reports, including those from Gartner and the Center for Connected Medicine, consistently list operational efficiency and margin improvement as top C-suite priorities.