

Interoperability is the Future

3 Questions Critical to Achieving Healthcare Interoperability

The complexity of interoperability plagues the progress of Health IT, and yet it is the backbone to critical improvements in healthcare today.



Underscored by government mandates and financial incentives, interoperability has become one of healthcare's most urgent needs in the quest for better patient care. According to HIMSS, interoperability is defined as the ability of different information technology systems and software applications to communicate with one another; exchange data accurately, effectively and consistently; and effectively use the data that has been exchanged.

In short, simply exchanging healthcare data does not add up to true interoperability, because in order to be useful, data must also be interpreted accurately by the receiving system.

Currently, this level of interoperability is not common between hospitals, labs, physicians, clinics and long-term care healthcare facilities. This "interoperability gap" leads to poor communication, which in turn can mean dangerous outcomes due to disrupted, delayed, or altogether undelivered care. In fact, according to the Department of Health and Human Services (HHS), 20 percent of preventable medical errors are caused by lack of immediate access to relevant health information.

Barriers to Interoperability

Despite the urgency of achieving true interoperability, progress has been slow, and industry experts say several factors are to blame.

- **Lack of electronic data** – In order for health information exchange to be achievable, patient data such as clinical notes, discharge summaries, administrative information, surgeries, health history, test results, and medications must be electronically available. Many providers simply do not have the resources, equipment or funding to accomplish the task.

¹ "Interoperability vs Health Information Exchange: Setting the Record Straight," Dr. Doug Fridsma, HealthIT.gov, January 9, 2013

"Health information exchange is important – it is a vital part of modernizing our health care system. But health information exchange is **not the same** as health information interoperability. Transport standards are important to achieving health information exchange, but they will not get us to true interoperability unless we continue our work developing the full set of standards needed to support interoperability."¹

Dr. Doug Fridsma
Chief Science Officer and Director,
Office of Science & Technology, ONC



“The expectation that electronic health record systems would generate costs savings has not materialized in part because of slow health IT adoption and a lack of interoperability.

We believe that the original promise of health IT can be met if the systems are redesigned to address these flaws by creating more standardized systems that are easier to use, are truly interoperable, and afford patients more access to and control over their health data.”²

Rand researchers Arthur Kellermann and Spencer Jones

- **Poor quality data** – Duplicate data, incomplete data and multiple listings of the same patient (e.g. Joseph Smith vs. Joseph J. Smith) can lead to difficulty administering proper care. Analyzing and correcting for poor quality data is a time and resource-intensive endeavor.
- **Burden of standards in Health IT** – Standards are a necessary evil of Health IT, and are likely to increase as EHRs begin to interoperate and data structure and terminology becomes more important.
- **Lack of cooperation between vendors, and between providers** – Vendors may feel siloed solutions are more beneficial to their bottom line; while providers may be hesitant to share their data with each other, or share the connection burden and costs. On the provider side, in many cases physicians are being forced by hospitals to achieve HIE by providing connection capabilities and getting EHR systems up and running on the hospital's timeline. Until vendors and providers are willing to extend their boundaries and share the responsibility of interoperability, health information exchange will likely continue to progress slowly.
- **Complexity of interoperability** – The landscape of healthcare information changes so rapidly (e.g. patient health changes and test results) that providers find it difficult to keep up. Every patient test and doctor visit must be tied back to the EHR. In addition, some files (such as test results) can become quite large, and not all entities have the same technical capabilities for exchanging large files. For example, a non-profit clinic is not likely to have the same capabilities as a major university medical center.
- **Vendor resistance to Meaningful Use** – Some experts question the effectiveness of Meaningful Use incentives in spurring efforts to achieve interoperability; and there is even speculation that EHR and other solution vendors are purposefully stalling because it is not in their best interest to achieve interoperability. Accurate or not, such speculation points up the fact that interoperability is not just a technical issue – it is political, economic and even social, according to Dr. David Blumenthal, former head of the Office of the National Coordinator (ONC) for Health IT.

3 questions to help you identify risk, ensure compliance and discover opportunity as you drive toward interoperability in healthcare

As your organization strives to meet interoperability goals, these three questions will illuminate areas of risk, identify possible opportunities to speed up the process and save costs, and provide insight into different types of information exchange.

1. Are you prepared to handle the issue of patient consent?

Patient consent must be managed and enforced throughout the life of the patient record. It's important to know how providers will report consent within ACOs and HIEs, and among providers. You must also be able to handle conflicting patient directives –

² “What It Will Take To Achieve The As-Yet-Unfulfilled Promises Of Health Information Technology,” Arthur Kellermann and Spencer Jones, Health Affairs Journal, January 2013.



how to detect them, and how to make enforcement decisions. Will you allow special cases for mental health and behavioral health exchanges where patients may have complex consent desires? You must also properly handle this type of consent: “I do not want my employer or insurance company to see this encounter.”

Appropriately handling patient consent requires a lifecycle approach, the right policy and process, and compliance with IHE Basic Patient Privacy Consent (BPPC) standards.

2. Will you use Direct (directproject.org) to exchange data with providers and organizations via secure messaging?

Direct enables point-to-point exchange of secure encrypted documents, but there are several factors you need to take into account.

- You must be able to identify and authenticate providers.
- As a Health Information Service Provider (HISP) you must be able to manage certificates between organizations.
- You need to understand how Direct exchange will impact workflow – for instance, does it require manual review of mailboxes and manual import of verified information; and if so, do you have the resources to handle it?
- You also need to ensure that your planned implementation of Direct supports Cross Enterprise Document Sharing (XDS) with IHE exchange services.

Using Direct may be the lowest cost, lowest barrier to entry; and implementation can be fast, taking mere hours or days for data exchange to begin. Whatever solution you choose, choose wisely – “free” solutions can be costly, requiring expensive customization, compatibility and capability upgrades, and more.

3. Of the two basic exchange models, which is better for your organization: push connections via point-to-point exchange, or pull connections via IHE profiles?

- The push model profile:
 - Point-to-point exchange via HL/7 enabled via email
 - AS2, EDI, flat file using existing gateways
 - Many options to connect
 - May require any-to-any protocol, data translation and data transformation
 - Supportable by most partners
 - Best if enabled by an HIE or gateway
 - Can reuse or supplement existing infrastructure
 - Requires a secure DMZ solution, B2B engine, and active/passive infrastructure

“Healthcare quality and efficiency could move forward 20 years in a matter of months if only there were true interoperability of electronic health information, according to a noted critic of the health IT industry.”³

³ Interoperability: Quick Route to Better Care,” Neil Versel, Informationweek.com/healthcare November 12, 2012.

What are the primary benefits of the push model? First, batch record publishing is supported by almost every healthcare system, and eligibility and claims are already commonly exchanged using this model. The push model also works very well to exchange information after an encounter, and is also the lowest cost way to exchange post-encounter information (such as communicating discharge instructions to a nursing home).

- The pull model profile:
 - “Conversational” exchange via IHE profiles⁴ using query and response.
 - One connection, one protocol, one format
 - Requires adherence to standards
 - May not be supported by all partners
 - Best if HIE or intermediary serves as a hub/gateway
 - Requires a sophisticated infrastructure; vendor support for IHE profiles; active/active infrastructure; real-time capabilities; Web services with SOA; and sophisticated IT support and programming resources

What are the primary benefits of the pull model? First, it facilitates discovery services, allowing you to search for and locate patients, providers, provider networks, etc. You can search based on demographics, find out who has previously seen a patient, and request copies of records in real time. The pull model is best suited for unplanned encounters such as in an emergency department, but is also useful for new patients or patients with multiple providers and complex medical conditions.

Interoperability – The Key to the Future of Healthcare

Interoperability is a major concern of the ONC, and although steps are being taken to standardize elements such as reporting, data structure and access and to further develop guidelines and best practices for providers and vendors, progress has been slow to date. It’s up to vendors of EHR systems to break down the silos and build easy-to-use solutions that can communicate with others and exchange data securely and effectively. And it’s up to providers to change the way they administer care to fully embrace Health IT and take advantage of its benefits.

Only then will our healthcare system – and actual patient care – improve.

⁴ Connectathon is a helpful tool for learning how to implement IHE profiles. HIMSS has published an affinity document that serves as a detailed primer on the use of IHE profiles for health record exchanges.

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