THE NON-CIO'S GUIDE TO INTEROPERABILITY

Read this before your next technology purchase

The constant expansion of technology in hospitals

For many years, healthcare systems and clinicians have coped with patient needs that keep growing in volume and complexity. Hospitals also deal with tight budgets, increasing regulations, and a limited population of healthcare professionals.

Fortunately, supportive healthcare technology has also grown, diminishing the scope of these limitations with simplified workflows and more automated patient care traceability. Secure messaging via mobile devices and "smart" patient care devices are only a couple of the game-changing technologies in use today. In addition, to ensure more reliable and efficient response, nearly all of the important hospital workflows call for critical communication between caregivers and the systems that monitor patients. Clinicians and other staff are now surrounded with technology that fills information gaps to improve care and ensure safety for patients.

As a hospital leader, you've likely been part of task forces or initiatives at your hospital to research, select, and implement these solutions. You've brought your point of view as the leader of a line of business (LOB) and perhaps as a clinician as well. Through these processes, you've become significantly more tech-savvy yourself. You may be wondering: is this need for technical knowledge my new normal?

As a hospital leader, you will likely be involved in future technology purchases

You won't be surprised to hear that technology use in hospitals is likely to accelerate.[1] And non-technology leaders like you (director of nursing, head of cardiology, VP of quality) will be involved to an extent you may not have foreseen a few years ago. In 2018, the respected Black Book Research firm completed a comprehensive survey of hundreds of healthcare CIOs and senior management leaders, revealing some thought-provoking results.[2] For example:

In 2015, CIOs held the balance of power over IT purchasing decisions, controlling 71% of decisions. But [in 2018] that figure fell to just 8%.

Black Book Research, 2018

Several factors contribute to the decentralization of technology purchases. For one, there are more and more niche products in healthcare technology. The niche products (also known as "point solutions") affecting your LOB require more expert input from you as a key user or beneficiary of these technologies.

Enterprise-wide thinking is key

Niche products are one thing, but niche *decision-making* about technology is not optimal. In the past, individual departments or programs may have made purchases that fulfilled their own needs but now must embrace a bigger-picture point of view.

If you're a hospital leader in this situation, you are far from alone. Many healthcare organizations have invested in technology piece by piece or department by department, using disparate vendors. This piecemeal approach means valuable data from one system might not be shared with or influence a workflow managed by another system, creating inefficiencies across the enterprise. At the same time, no one technology offering can solve every need in a healthcare organization.

A lack of shared information can prevent the solutions from ever providing true end-to-end value for the staff that use them. As a result, staff may be unable to respond quickly to urgent patient needs or easily collaborate care for a given patient. That's why **interoperability** is such an important concept in today's healthcare environment.

How to get to interoperability – even if you didn't start there

Interoperability in healthcare is defined by the Healthcare Information and Management Systems Society (HIMSS) as "the ability of different information technology systems and software applications to communicate, exchange data, and use the information that has been exchanged."[3]

As one industry expert puts it, "When systems are interoperable, they have the ability to not only share information, but to interpret incoming data and present it as it was received, preserving its original context."[4] To provide maximum benefits, including useful clinical insights, all systems must work together to connect key people and information in real time, as well as to understand the meaning of the information they share. How do you achieve that goal?

Consider these guidelines before your hospital's next technology purchase

1. Insist on technology that uses industry standards

Ask vendors if their solution was built following established industry standards. A challenge for interoperability, as you might guess, is setting standards for how data is structured and transported among different systems developed by a wide variety of vendors.

Integrating the Healthcare Enterprise (known as IHE) is an industry-leading initiative dedicated to providing interoperability in healthcare by developing and maintaining standards. IHE brings together healthcare professionals and technology leaders to "improve the way computer systems in healthcare share information."[5]

For example, since 1987 IHE has been using HL7 (Health Level 7) standards to create useful and efficient interoperability profiles, which allow technology from disparate vendors to address specific clinical needs in support of patient care. Systems developed in accordance with IHE standards communicate with one another better, are easier to implement, and enable care providers to use information more effectively, according to IHE.[6]

The HL7 standard has been widely adopted by healthcare technology vendors in the U.S. and globally.

Best of all, interoperability standards are continually being tested and updated as technology changes. Vendors who are serious about interoperability take part in industry events dedicated to standards improvement. For example, IHE holds several annual events called the IHE Connectathons[7] in Europe, Asia, and North America where healthcare technology companies test their solutions with each other's products and IHE standards in such areas as EHR, patient monitoring, infusion, ventilator, and OR workflow. They are able to test, debug, and fine-tune interoperability with others in a cooperative environment to provide better technology solutions.

In addition, each year at its annual conference HIMSS features an Interoperability Showcase™.[8] Participant companies take many real, common medical use cases, and exchange and use data in real time to showcase how interoperability can improve care and outcomes.

Benefits of standards

When you insist on technology that follows global standards, you gain several advantages.

- **Solve the really big problems, reliably.** When multiple systems utilize interoperability standards, solutions to problems that individual systems can't solve become possible through collaboration and open data-sharing.
- **Minimize disruption of your workflows.** Like most hospitals, you are probably using multiple vendors' solutions in your systems. If you know the technology follows a recognized standard it becomes much easier to maintain, regulate, and update operations without disrupting staff and patient care.
- **Make rollout and adoption of new technology much easier.** Because a solution is built to standards, your IT colleagues are more familiar with their makeup and can provide better support. You save time as well as staff and patient frustration when implementing a new technology.
- **Save money.** Less time spent in manipulating the solution means less time lost in productivity.
- **Take advantage of continuous improvement**. By following IHE standards, for example, you (or your vendor) can seamlessly put into practice that group's continuing research into updated and expanded features. Stay ahead of changes without having to re-invest in new technology.

2. Maximize your EHR investment

Today, adoption of electronic health record systems (EHRs) in U.S. hospitals is almost universal – an estimated 99 percent of hospitals across the country now use EHRs compared to about 31 percent in 2003.[9] An EHR imparts tremendous value as a source of patient information: It provides a common dataset that can speed and simplify communications. However, the EHR primarily functions as a system of record (patient history), not a system of action.

The most popular EHR vendors support email and secure messaging that can be attached to patient records, pop-ups, or best practice alerts. Some EHR vendors have even branched out into real-time secure chat applications accessible within the system, which have driven important functions for care team structures and coordination.

EHRs are excellent repositories of patient data and sources of clinical team scheduling for the specific clinical staff they support, but they are not built for sharing actionable information in real-time scenarios. For example, they don't normally communicate real-time critical alerts from all the systems in the hospital that can affect safety and patient care.

The only people who have access to the communication tools within the EHR are those who possess login credentials to the system, which will exclude some key roles. It makes sense to limit access to patient records, of course, but it limits the communication connections that can be made. Think about the people involved in operational areas critical to the support of clinical staff (such as transport, biomed, and security), and you can see the limitations.

Focusing solely on the EHR and then trying to patch together every department's systems is shortsighted. Instead, hospitals today are benefiting from an enterprise-wide communication platform that features interoperability with the EHR to connect people and workflows across the organization, and which offers a variety of options to share data and functionality with hospital systems key to patient care. This is the necessary cost-effective and cost-efficient complement to the EHR.

Discharge process, using interoperable communications

Dr. Colletti enters discharge order in EHR.

Care team notified to start the discharge process.

When patient is ready to leave, transport services and housekeeping are automatically notified on their mobile devices that the patient is ready to depart and the room can be prepared for the next patient.

Bed is available for next patient.

3. Overcome the "multiple app" environment

As mentioned earlier, many healthcare organizations have invested in clinical technology piece by piece, with several different vendors – none of which was probably built to "talk to" others. The recent trend of mergers and acquisitions within healthcare has exacerbated the problem. A statistic from HIMSS Analytics[10] lays out the surprising scope of this challenge:

The average health system has 18 different EHR vendors.
[including affiliated providers as well as inpatient and outpatient settings]
HIMSS Analytics, 2018

In addition to EHRs, most healthcare organizations use hundreds of different applications within the walls of the hospital. Given the EHRs, applications, and other proprietary systems in use in most hospitals, the challenge to get real-time data exchange (interoperability) on an enterprise-wide basis is daunting.

It's one thing to find an enterprise-wide platform going forward, but can you use your current systems and still achieve interoperability?

You can. Again, industry standards are key. Enterprise-wide platform solutions can connect all the point solutions together for true clinical communication and collaboration – if they have all been built using the same standards.

The advantages of platform technology

An enterprise-wide clinical communication platform promotes care team collaboration and improves patient outcomes.

Discover how to simplify and speed up your hospital workflows»
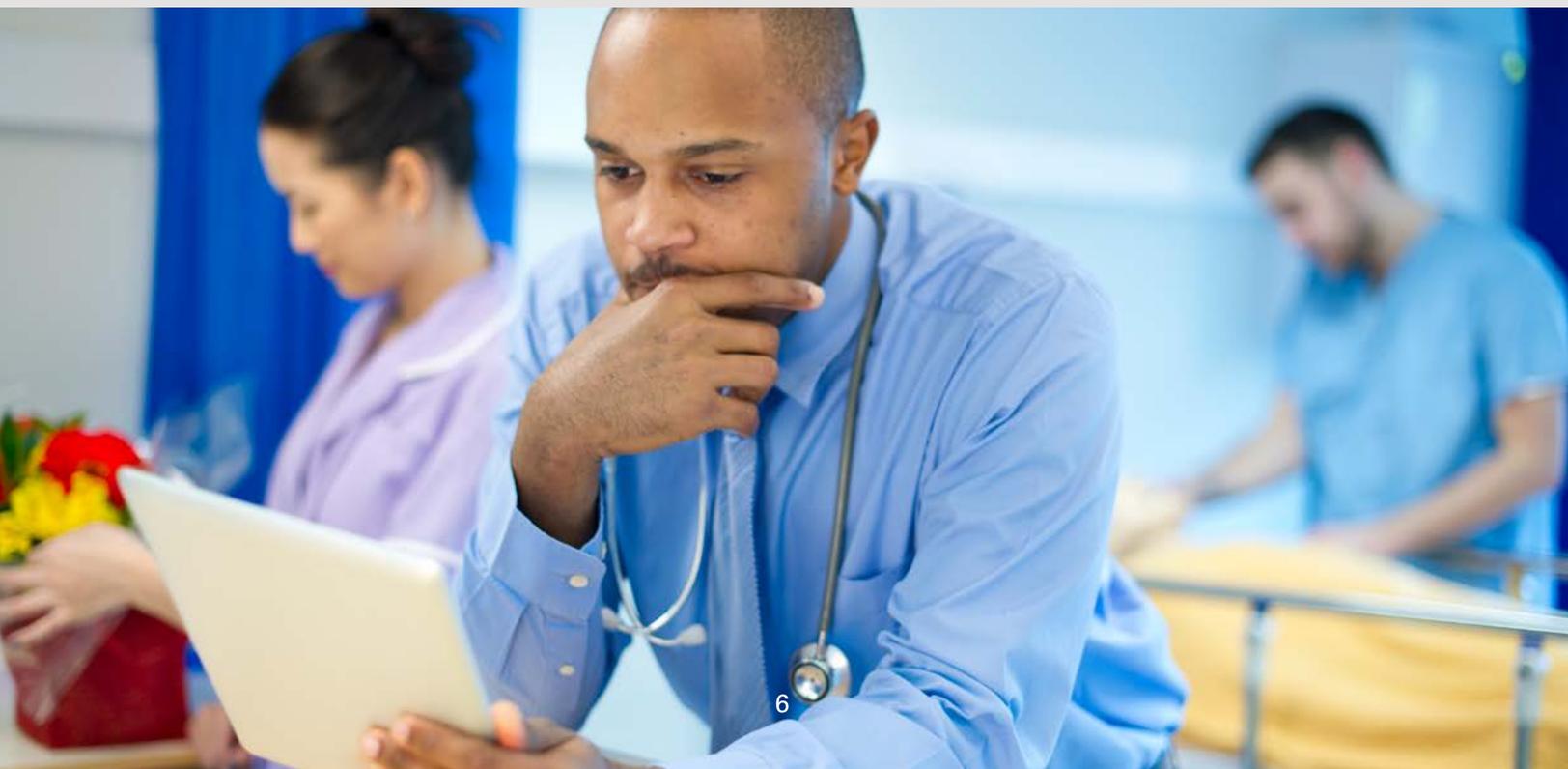
Get ready to be a technology leader

According to the Black Book survey, the next technology investments will be directed toward "business initiatives such as improving patient experience, transforming revenue cycle management and financial processes, increasing hospital operational efficiency, and growing the health system's revenue and the loyalty of healthcare consumers."[11] All these initiatives will require optimizing hospital-wide communications, which is key to patient care and outcomes. As we have seen, the more your hospital technology solutions are interoperable with each other, the better.

Leaders like you will likely be using your CIO colleagues as strategic consultants or advisors for evaluating business needs, risk assessments, and commentary on technology choices -- not as owners of purchasing decisions, according to Black Book.

> *LOB leaders are more likely to lead these [business] initiatives in 2019, according to 55% of all C-suite respondents.*
> Black Book Research, 2018

Putting it into practice: A summary

When you're asked to serve on (or lead!) your next technology purchase task force, keep these three key concepts at the top of your checklist:

☑ **Insist on technology that follows industry standards**, so that it can integrate with already-existing niche solutions in your hospital, simply and reliably. (Assuming those solutions also follow the standards.) Once you have this requirement, everything becomes faster, less costly, and easier for your hospital in the future: scaling to meet growth, rollouts of new technology, and staff collaboration for better patient care.

☑ **Give your support to a well-rounded communication system that works for the entire organization, not just the clinical staff.** When considering new technology in your organization, think beyond specific solutions. Look outside the EHR: Ensure that all roles that support the safety of your patients and staff can be connected without having to deploy disparate sources to accomplish their tasks. Keep in mind that housekeeping, contact center, facilities, security, and sometimes even biomed and transport are not typically given EHR access. These key hospital staff still need to communicate with people in clinical and nonclinical roles for day-to-day operations and the care and safety of patients in your facility.

☑ **Demand interoperability.** Make sure your next communication technology has the ability to connect your disparate systems and deliver data with patient context based on the situation at hand for fast decision support. This will operate as the ultimate complement to your EHR and other clinical or nonclinical systems. Interoperability is essential for effectiveness and predictability that will drive improved patient care and safety, operational efficiency, and increased patient satisfaction.

References

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