

The Healthcare Plan for Growth:

Three key factors for successful cloud migration for healthcare

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Healthcare & Technology

More than a decade after cloud technology stabilized, it's now significantly impacting the healthcare industry. Healthcare has been a slow adopter of new digital technologies. It took an act of Congress to adopt electronic health records (EHRs). The [2009 HITECH Act](#)¹ mandated the transition from paper charting to digital record keeping. And, to this day, some [doctors say their EHR system is an unwieldy tool](#) that disrupts the patient encounter more than it facilitates patient satisfaction.²

Yet in some ways, the industry is well-equipped and ready for change. The COVID-19 pandemic prompted most providers to adopt some form of telemedicine technology. [McKinsey suggests](#)³ telemedicine tools will remain part of the new normal long after the pandemic is conquered. If the virtual house call is here to stay, it creates significant pressure to effectively support the long-term use of these technologies. As more services are offered to patients outside of established clinical locations, there will be greater opportunities to collect data and a higher dependence on interoperability between legacy platforms.

1 HHS.gov. "HITECH Act Enforcement Interim Final Rule," June 2017.

2 Girgis, Linda. "Why Doctors Hate Their EHRs," Physicians Practice, July 2017.

3 Bestsenny, Oleg, et al. "Telehealth: A quarter-trillion-dollar post-COVID-19 reality?" McKinsey & Company, May 2020.

Cloud-based telemedicine is just one instance of a trend toward cloud adoption that many healthcare CIOs are embracing. [One Gartner study⁴](#) predicted more than 30 percent of health system data centers will reside in the cloud by 2022. However, the migration has clearly begun, with [83 percent of healthcare providers⁵](#) reporting at least some of their business functions reside in the cloud.

What about Security?

While many in the healthcare C-suite still worry about cloud security, the data shows that [85 percent of data breaches⁶](#) are caused by unintentional or inadvertent human error. [The Atlantic reported⁷](#) on the extensive and increasing number of healthcare data breaches, suggesting, “much of this risk can be mitigated if an organization decides to outsource its IT operations to a Health Insurance Portability and Accountability Act (HIPAA)-compliant data center.”

Legacy platforms in hospital system basements continue to be vulnerable to cybersecurity breaches, in part because these organizations often struggle to find top IT security talent. [Healthcare IT News reported⁸](#) on a perfect storm consisting of ransomware, Internet of Things (IoT) devices, third-party vendors, and a lack of cybersecurity talent creating unprecedented risk for healthcare providers, observing: “The attack surface is growing bigger every day, and there aren’t enough skilled professionals to defend it.”

All these factors point to the increasing necessity of cloud adoption for healthcare providers. The time is now for healthcare to move its data to hybrid or full cloud architectures to cut costs, decrease security risks, and take advantage of cloud scalability for all the data it’s been collecting.

As your organization moves toward the cloud, keep these three keys to successful cloud migration in mind.

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- 4 Davis, Jessica. “32% Providers Store Data in Cloud, Despite Lack of Security Resources,” Health IT Security, July 2019.
 - 5 “Top Cloud Computing Trends for Healthcare in 2019,” Synoptek, January 2019.
 - 6 Sher-Jan, Mahmood. “Data indicates human error prevailing cause of breaches, incidents,” IAPP.
 - 7 Bailey, Richard. “Data Breaches Caused by Misconfigured Servers Within a Healthcare Environment,” Atlantic, September 2019.
 - 8 Grady, David. “Cyber-talent shortage can put healthcare organizations at risk,” Healthcare It News, February 2020.

1) Building the case for the cloud in healthcare

Healthcare IT recognizes the value in cloud architectures for increased security, lower costs, no-maintenance redundancy, and unlimited, elastic scalability. But many remain uncertain about the how, what, and when of cloud migration. Protecting data while creating a seamless transition may be outside the comfort zone for many CIOs and CTOs. This uncertainty creates at least the perception of risk, so to move forward with confidence, building the case for cloud migration, along with a solid plan, is imperative.

Understanding the “why” for your cloud migration goes beyond the technical. Every CIO is acutely aware of the potential for failure simply due to lack of stakeholder buy-in; many experienced these struggles during EHR rollouts. Making the clinical and business case is a crucial factor for a seamless transition. [Many studies](#)⁹ show the necessity of stakeholder buy-in for any technology implementation, so what’s driving your healthcare organization into the cloud? Some possibilities:

Streamlined access to patient data, and the ability to leverage sophisticated analytical tools. Using sophisticated application program interfaces (APIs) brings data from disparate systems into the cloud, eliminating interoperability issues with legacy on-premises hospital infrastructures.

Easier change management. Health systems have been buying independent medical practice networks for years as a way to build market share. Mergers and acquisitions are a driver for any industry, and the cloud helps you subsume new entities faster.

Increased security and easier compliance. The [AWS](#) and [Azure](#) clouds are the two top providers in the industry, affording healthcare providers the HIPAA-compliant security necessary to protect patient data. Both offer physical and technical security infrastructure as well as extensive data access controls that many healthcare providers simply can’t afford to maintain.

Low-cost data compute, storage, and management. As-a-service models allow a subscription model for more regulated cost management without the purchase spikes associated with on-premises equipment. Outsourcing to an external vendor frees your IT team to work on more strategic business initiatives.

9 Palvia, Prashant, et al. “Critical Issues in EHR Implementation: Provider and Vendor Perspectives,” Communications of the Association for Information Systems: Vol. 36 , Article 36, June 2015.

What about the Pandemic?

While there are many important reasons to migrate to the cloud, the impact of the global pandemic has done nothing to lessen the necessity of remote work flexibility for healthcare administration personnel.

Perhaps ironically, it was the pandemic that pushed many healthcare providers into cloud-driven telemedicine adoption. [Healthcare IT News](#) shared the [story](#)¹⁰ of Lee Health in Florida using the cloud to rapidly ramp up support for telemedicine for its ambulatory practices. Health system leadership stated, "The cloud-based, mobile-enabled solution meant we could use existing resources and keep implementation hurdles to a minimum."

[MobiHealthNews](#) reported¹¹ that 77 percent of the healthcare consumers they surveyed as part of a nationwide poll said they'd be willing to use telemedicine again once the pandemic was over.

Whatever the reason for cloud migration, one thing is clear: This is not necessarily a task for IT teams that are busy just keeping the lights on. Once the case is built for the why of your cloud migration, it's time to seek an outside resource to facilitate the process.

Resiliency and disaster management. The cloud offers near-continuous real-time security updates and regular backups, helping prevent ransomware malfeasance. Virtual machining models allow a full lift and shift of critical IT functions in the event of a natural disaster or other crisis.

Resources for healthcare big data. With the cloud, omnichannel data can be collated while machine learning algorithms can slice and dice data in new predictive ways. As healthcare organizations increasingly move toward value-based care, it's the quality of your data that will govern your ability to improve outcomes, patient satisfaction, and ultimately, your bottom line. The cloud is a venue that is robust enough to handle the up-and-coming models of personalized healthcare that your customers demand.

2) Choosing a vendor with a long technology track record that has a strong healthcare experience

The healthcare industry is changing, perhaps more rapidly than it has in decades. Finding a cloud migration or data analytics platform provider that knows your business is necessary because of the industry's unique complexities. For example:

- Healthcare faces increasing challenges that extend beyond the pandemic crisis of care delivery. Reimbursements have been shrinking for years as compliance rules have increased. The cost of care is high and going higher as retiring baby boomers with chronic care needs take up almost 90 percent of the \$3.3 trillion¹² in healthcare spending in the United States. A [Gartner survey reveals that 41 percent](#)¹³ of healthcare providers reported a funding shortfall even before the coronavirus pandemic hit.
- From an infrastructure perspective, there is increasing demand to capitalize on the data captured in the legacy patchwork of siloed IT systems. These pressures stem from a changing healthcare paradigm that is moving from reactive treatments to proactive care designed for populations.

10 Siwicki, Bill. "Cloud-based telehealth, linked with Epic EHR, helps one hospital scale up virtual care," Health IT News, July 2020.

11 Muoio, Dave. "After COVID-19, telehealth's momentum will be sustained by younger consumers seeking convenience," Mobihealthnews, November 2020.

12 Muoio, Dave. "After COVID-19, telehealth's momentum will be sustained by younger consumers seeking convenience," Mobihealthnews, November 2020.

13 "Gartner Says 50% of U.S. Healthcare Providers Will Invest in RPA in the Next Three Years," Gartner, May 2020.

- Behind all of these issues lies the increasing demand for data-driven healthcare. Over the past few years, big data analytics has moved from an idea to a necessity for patient-centered care.

For hospitals just beginning their cloud migration, finding the right vendor-partner that understands all of these issues can be difficult — but it's also a necessity. Achieving HIPAA compliance while preserving Protected Health Information (PHI) requires sophisticated planning and execution. Look for a vendor that:

- Is an expert in big data, with a team of experts and tools to handle legacy platform data that wasn't built with the cloud in mind
- Has a healthcare specialization and experience in cloud migration
- Has relationships with reputable cloud vendors that also specialize in HIPAA-compliant cloud storage
- Can go beyond a canned template to provide a customized solution that will fit the complexities of your healthcare ecosystem
- Has proven expertise in combining and merging data from various sources
- Will work effectively with the existing IT team and your various vendors

Look for a cloud vendor equipped with:

- Speed and the ability to get up and running quickly with production-ready code and fully configured environments
- Simple administration that allows your IT team as many custom features and as much control as they need or want
- The elasticity to optimize the resources and capacity you need quickly for the lowest operational cost
- HIPAA-compliant security features along with enterprise-level performance
- Connectivity across all of your siloed and complex data ecosystems

No data migration will go well if you don't trust your vendor partnerships. From the cloud backbone provider to the data management resource, these relationships should be long-lasting, performance-based, and a win-win for all parties involved.

3) Ensuring Flexible Deployment Options

The complexity of healthcare data channels requires flexible deployment options. There is simply no other way to fulfill the idea of a single source of truth that will govern clinical, operational, and administrative decision-making.

The problem with healthcare data today is that it flows from multiple legacy systems that lack interoperability. Clinical workflows, patient data, and even bed management are challenging enough in the average hospital. These functions should be interconnected in a way that improves healthcare outcomes. But because these functions all reside within different technology platforms that generate siloed data, the complexities and inefficiencies of these activities are multiplied. Without the right technology overlay, these functions will remain patched together and inefficient, offering only a narrow view of data trends and triggers, not the full trustworthy view you need for seamless operations and data-driven decision-making.

Your cloud migration must leverage flexible tools that can connect to these separate platforms while systematizing and cleaning the data *before it goes to the cloud*. Leveraging an omnichannel data platform along with a trusted vendor gives you migration options that aren't possible within your current infrastructure.

Your cloud migration partner should offer four primary options:

- A fully managed turnkey multi-tenant cloud environment where the cloud provider manages all support, software updates, backups, and peak performance requirements
- A fully managed dedicated single-tenant infrastructure that you can control or customize for specific applications or sensitive data
- A self-managed cloud environment that you control in a private cloud or on-premises instance
- Options for business-specific needs, such as single tenancy for security or compliance

Migrating to the cloud is a big investment with many risks. Once you've determined your business case for the cloud, achieved stakeholder buy-in, and selected your cloud partnerships, flexibility of deployment will help ensure a seamless migration process.

Intelligent healthcare cloud data management is here

TIBCO understands the power of healthcare data. The TIBCO Omni-HealthData platform and the TIBCO Omni-HealthData Cloud managed service equips healthcare organizations with artificial intelligence (AI) insights to make data-driven decisions. Cloud data and analytics provide healthcare organizations with open technology that can evolve to meet the ever-changing needs of patient care.

Here is one example of how the intelligent Omni-HealthData platform can organize, onboard, and operationalize your information systems:

St. Luke's University Health Network is a 12-hospital, 300-site integrated delivery network in Pennsylvania. The organization, like many healthcare systems today, operated with siloed legacy information systems that made it more costly and complex to deliver care.

With TIBCO data and analytics, St. Luke's implemented a modern enterprise data warehouse and business intelligence platform to create a single, reliable source of information for more than 15,000 providers across hundreds of locations. Today, TIBCO's AI-driven software actively combines and extrapolates data from 60+ data sources into one consistent, real-time analytics tool positively affecting system finances, human resources, patient care, and business development.

In addition to TIBCO's partnership helping this healthcare provider in the three ways listed below, it achieved a 5x ROI in the first 18 months:

- Improved the quality of care through evaluation of patient outcomes, healthcare costs, and other data
- Improved patient satisfaction by connecting survey data and healthcare outcomes
- Helped prioritize spending on a healthcare network expansion initiative by analyzing finances within the context of organizational goals

Today, more than 100 analytic applications democratize data across St. Luke departments and networks, supporting care quality, patient experience, and network expansion initiatives. Since the implementation of the TIBCO data and analytics managed service, St. Luke's has received Healthcare Information and Management Systems Society's (HIMSS) Adoption Model for Analytics Maturity (AMAM) Stage 7 validation and is the recipient of the HIMSS Davies Award of Excellence. The St. Luke's network is today recognized as the highest quality, lowest-cost system in the region.

St. Luke's ROI

5x payback in just 18 months with an estimated ongoing value of \$8 million annually

It's time for healthcare organizations to make the same leaps other enterprise institutions have made. Big data has been identifying waste, lowering costs, and improving customer relationships in other major industries for some time now. Hospitals and health systems can learn from data-driven digital transformations in other fields by leveraging the latest cloud technologies to improve the quality of U.S. healthcare delivery.

Ask the expert is an offer to meet with an experienced TIBCO leader in the industry. You can have that initial discussion to get you moving forward with your cloud journey.



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