



Healthcare in the Cloud Era:

The Technology Strategies Shaping Tomorrow's Care

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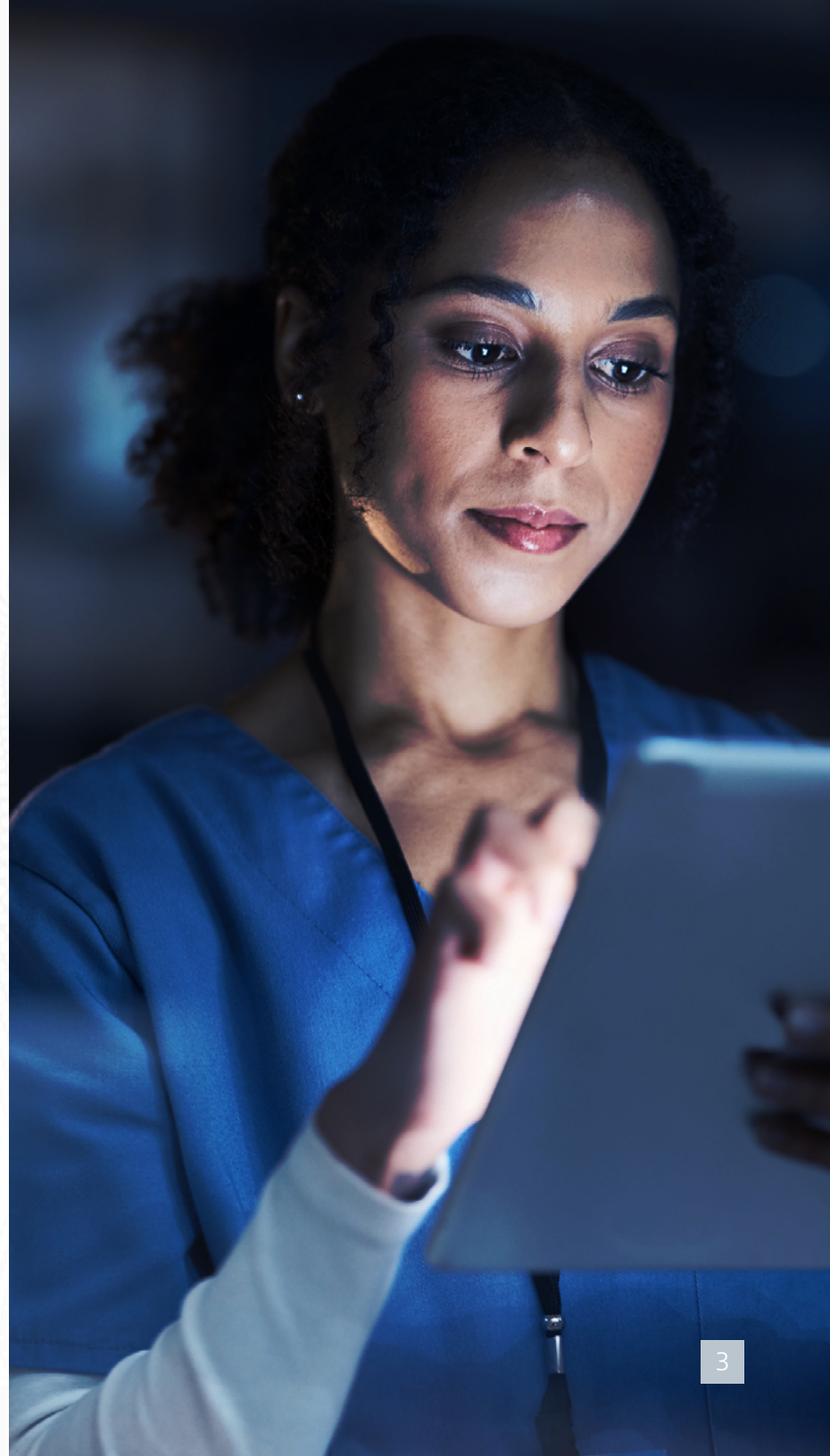
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It's the eternal conundrum:

**How do you deliver quality
accessible care to patients while
keeping costs under control?**

The answer may be at least
partially in the cloud.



INTRODUCTION:

From patients to providers, the same thing is on everyone's mind: the cost of healthcare.

At small hospitals in rural communities to big-city, big-name healthcare systems and everyone in between, making budgets work has become more challenging than ever—and it wasn't a picnic before. According to the American Hospital Association's latest annual Cost of Caring report, everything from labor to supplies to infrastructure has become an average of 7.5 percent more expensive, straining budgets and outpacing the rise in hospital prices more than 2 to 1. "These strains are jeopardizing hospitals' ability to provide around-the-clock care and services that patients and communities need," AHA President and CEO Rick Pollack commented when the report was released in March 2026.

Meanwhile, patients are feeling the pinch too—often even more so. In survey after survey, patients report that cost and affordability are top barriers to getting needed care. More than three fifths say that there are times when they can't afford to see the doctor. Half report that they wouldn't be able to pay an unexpected medical bill of \$500—which is more likely to happen, since insurers are denying claims at a faster pace than 10 years ago. All this is happening as insurance premiums are increasing faster than wages, and inflation is pushing other costs for consumers even higher.

This just adds to the bad news for healthcare systems trying to serve patients in communities across the country. From rural hospitals trying to keep the doors open to urban hospitals trying to maintain market share in competitive markets, it's harder than ever to deliver quality care that is accessible and affordable.

Technology—and increasingly AI—can offer the opportunity for improved efficiencies and cost savings in for both patients and providers, but only when implemented thoughtfully. The average hospital has hundreds if not thousands of apps running to take care of functions from patient wayfinding to staff scheduling to EHRs to remote patient monitoring. This "application creep" can lead to redundancy and fragmentation that reverses any efficiency gained, especially when they're spread over multiple managements and storage methods, both on premises and across multiple clouds. Negotiating and managing the different



contracts consumes more valuable time and requires expertise that can be difficult to hire, especially for rural or under-resourced facilities. With PHI spread across multiple systems that may or may not maintain full HIPAA and other regulatory compliance, healthcare systems are at greater risk for costly cyberattacks and privacy breaches.

Technology fragmentation also makes care more cumbersome and less convenient for patients who encounter hurdles and hassles trying to schedule appointments, communicate with their providers, and navigate an increasingly complex healthcare system. In a recent report on healthcare trends released by the American Association of Physician Associates (AAPA), patients on average spent the equivalent of a full workday each month on care coordination and navigating the healthcare system; Caregivers spend even more time.

Technology fragmentation can also mean more work for both clinical and administrative staff who must learn different systems, often re-entering information multiple times in different places. Patients struggle with multiple portals and log-ins. All of this leads to increased provider burnout and patient frustration, neither of which helps healthcare's cost overruns.

On the other hand, consolidating functions into a single, secure technology platform can help address these issues and help build a stronger, more patient-centered healthcare system. This can build back efficiency and lead to true cost containment that not only supports the four pillars of healthcare but also starts to deliver on the promise of interoperability.

To explore the challenges and potential, we talked to and surveyed healthcare executives in both large and small healthcare organizations to learn not only about their challenges, but their aspirations for the transformation of healthcare through more streamlined and effective technology. Two-thirds were in some stage of the transition to a hybrid cloud model—with about half in limited pilot or moderate adoption and the other half reporting that they had broadly adopted a cloud model or hybrid cloud constituted their core infrastructure strategy. Nearly half reported that migrating to a hybrid cloud model had improved their ability to meet compliance

and data-residency requirements and nearly all reported that the cloud drove strengthened resiliency overall.

But they also talked about the challenges they were trying to solve. Overall, their concerns fell into four categories—with a common theme of cost containment and common goal of improving both patient and provider experience:

- AI readiness
- Cost efficiency and ROI
- Operational resilience and compliance
- Hybrid cloud strategies

Based on their responses, this report captures the signals guiding healthcare's next evolution in the cloud era.



AI Readiness

The Challenge

Healthcare organizations are under intense pressure to adopt AI, but few are prepared to do so safely or effectively. In an industry where cost control is an urgent imperative, AI is projected to save as much as \$170 billion annually across both clinical and operational workflows.¹ Early adopters are already seeing this value: among the 79% of healthcare organizations that have already implemented AI, the average reported ROI is 320%.²

Healthcare organizations are eager to tap into these savings. Traditionally a laggard in adopting new technologies, healthcare now ranks among the most innovative verticals when it comes to AI. According to one recent analysis, healthcare organizations are implementing AI 2.2 times faster than the broader U.S. economy.³ Boards and executives increasingly expect every major technology initiative to include an AI component.

However, most healthcare organizations still lack the foundational capabilities necessary to support AI initiatives at enterprise scale. Many struggle with data fragmentation, since clinical information is typically spread across EHRs, imaging systems, local applications, and edge devices. Security and compliance are also concerns. Without robust guardrails, including data classification, labeling, and policy enforcement, AI tools can expose sensitive PHI and create compliance risks. When healthcare organizations attempt to deploy AI tools before they've established appropriate governance, the initiatives tend to stall.

For hospitals, health systems, and physician groups of all sizes, AI readiness can pose a cultural challenge along with a technical one. Organizations must build the right data architecture along with robust governance and security controls, but they also need clear policies about responsible AI use, adequate workforce training, and well-defined use cases with measurable business value.

We're always asking ourselves: Are we ready for AI? Do we have the right guardrails? The right data labeling? The right tools and classifiers? Boards are pushing for AI adoption, but you have to have the right tools and guardrails before you unleash AI and AI agents in your environment. The first conversations have to be about readiness.

Sr. Solution Architect | Tech Partner

Organizations that have implemented those security functionalities and provided those guardrails have been the most successful when it comes to AI adoption, whether that's on the productivity side, in custom development or in application integration.

Principal Solutions Architect | Tech Partner

¹ Forbes, "[Balancing the Cost of AI in Healthcare: Future Savings Vs. Current Spending](#)," April 2024.

² Microsoft, "[Microsoft makes the promise of AI in healthcare real through new collaboration with healthcare organizations and partners](#)," March 2024.

³ Menlo Ventures, 2025: [The State of AI Adoption in Healthcare](#), October 2025.

Why Microsoft Azure?

Software as a Service delivers applications through the cloud with automatic updates, centralized administration, and consistent user experiences.

Microsoft Azure supports faster AI adoption by providing a secure, governed foundation for enterprise AI that combines healthcare-specific data services, security controls, governance tools, and AI platforms within a single, unified environment.

- **Azure Health Data Services** centralizes and standardizes healthcare data, making it easy to aggregate clinical, imaging, and device data within a unified AI-ready platform with native support for interoperability standards including FHIR and DICOM.
- **Microsoft Purview** enables data protection and governance by classifying and labeling sensitive data and applying data loss prevention (DLP) policies that prevent PHI leakage into unauthorized AI tools.
- **Microsoft Cloud for Healthcare** is an AI and data services platform running on Azure that was designed specifically for healthcare providers and their partners. The platform supports patient engagement, team collaboration, and clinical operations, with security and compliance built in. It enables provider organizations to adopt and scale AI so they can deliver better experiences for patients and clinicians alike.



Real World Use Cases for AI in Healthcare

Healthcare organizations have found thoughtful implementation of AI can transform healthcare in meaningful ways. These include:

- **Streamlined clinical workflows:** AI agents and assistants can automate care documentation and administrative tasks to save time, improve operational efficiency, and promote clinician well-being. Tools like ambient listening minimize the administrative burden for clinicians while improving the accuracy of documentation. Connected contextual AI tools give clinicians immediate access to medical imaging and lab results, along with other data and reports, accelerating care delivery. And AI can customize clinical workflows for individual providers to reduce cognitive load and improve workplace experience.
- **Personalized patient engagement:** Leading provider organizations use data and AI to tailor patient interactions in ways that improve both satisfaction and outcomes. AI integrations make that personalization possible at scale. A 360-degree view of the patient, combined with AI-powered insights, enables rapid, informed provider decision-making, while patient-facing tools, including telehealth solutions, can increase the accessibility and quality of care.
- **Improved care management:** Organization-wide access to analytics and data insights supports better patient care and smoother clinical operations. AI-powered risk assessment tools can help patients make more informed decisions, while unified data access enhances communication and collaboration within care teams. Process automation reduces the amount of time that both clinical and administrative staff need to spend on repetitive tasks.

Cost Efficiency and Demonstrable ROI

The Challenge

Rising costs and declining reimbursement increase financial pressure on nearly all healthcare providers. Inflation is projected to add as much as \$370 billion in annual healthcare costs in the U.S. by the end of 2027.⁴ Medical practices report that their operational expenditures grew about three times faster than revenues over the past year.⁵ Proposed reductions to Medicare and Medicaid spending threaten to further amplify already-acute financial concerns, especially among rural providers.

Amidst these margin pressures, healthcare technology leaders increasingly must justify IT as a strategic investment rather than a cost center. Today's boards expect measurable ROI and rapid payback from digital transformation initiatives. Following the pandemic, many provider organizations began evaluating IT primarily through a cost lens, a perspective that may challenge the success of utilizing AI to transformation technology modernization initiatives.

An ongoing, industry-wide shift from CapEx to OpEx as the primary spending model continues to complicate budgeting. Although cloud services and SaaS subscriptions convert large upfront technology purchases into recurring operational expenses, healthcare organizations must actively monitor and govern their cloud consumption to avoid cost overruns. AI initiatives, with their significant compute demands, have the potential to drive further cost increases.

One concern with AI adoption, apart from cybersecurity, is the cost aspect. At first, it's cheap or free, but then once it's integrated into workflows and teams come to depend on it, the costs go up.

-CIO, University Hospital

I work for a small non-profit organization, and we've basically been forced to move more of our CapEx funds to OpEx. Since COVID, the annual price increases have just been crazy. I'm planning to start renegotiating every year with vendors with whom we don't have multi-year agreements in place. Everything has just skyrocketed.

-CIO, Community Hospital

⁴ McKinsey & Company, "[The gathering storm: The transformative impact of inflation on the healthcare sector](#)," September 2022.

⁵ Medical Group Management Association (MGMA), "[Medical practice operating costs are still rising in 2025—here's how to control them](#)," June 2025.

Why Microsoft Azure?

Most healthcare organizations have already made significant investments in Microsoft tools and services, but many do not take full advantage of them. Overlapping tools often duplicate functionalities already available elsewhere in the Microsoft ecosystem. Underused licenses are also a significant source of hidden waste. On average, healthcare organizations operate more than 1,000 individual applications, but few manage their application estate proactively.

Microsoft Azure offers comprehensive tools for cloud financial management and identifying which strategic investments to increase operational efficiency will pay off, for example, by increasing the productivity of small teams and reducing labor costs. These capabilities can help ensure that AI adoption improves financial performance, justifying the cost of the AI systems themselves.

- **Azure Cost Management** offers detailed visibility into usage, budgets, and spending trends. Choosing where to run applications—in the cloud or on-premises—based on cost as well as performance makes it possible to decrease the expenses associated with maintaining them. Right-sizing and reserved capacity can further reduce infrastructure costs.
- **Microsoft Fabric and Azure Analytics** can provide real-time visibility into productivity and resource utilization to help the organization identify and reduce waste.
- **Power BI and Microsoft Fabric** enable healthcare organizations to track and optimize AI token use.

For most IT teams, their investment in Microsoft is one of their largest investments. We try to help our clients get as much value from that investment as possible. Sometimes that's looking at what your entitlements are and where there are overlapping technologies. What are the feature sets? How do they compare? We want to see people take advantage of all the products they're entitled to.

—Director of Solution Architecture at Tech Partner

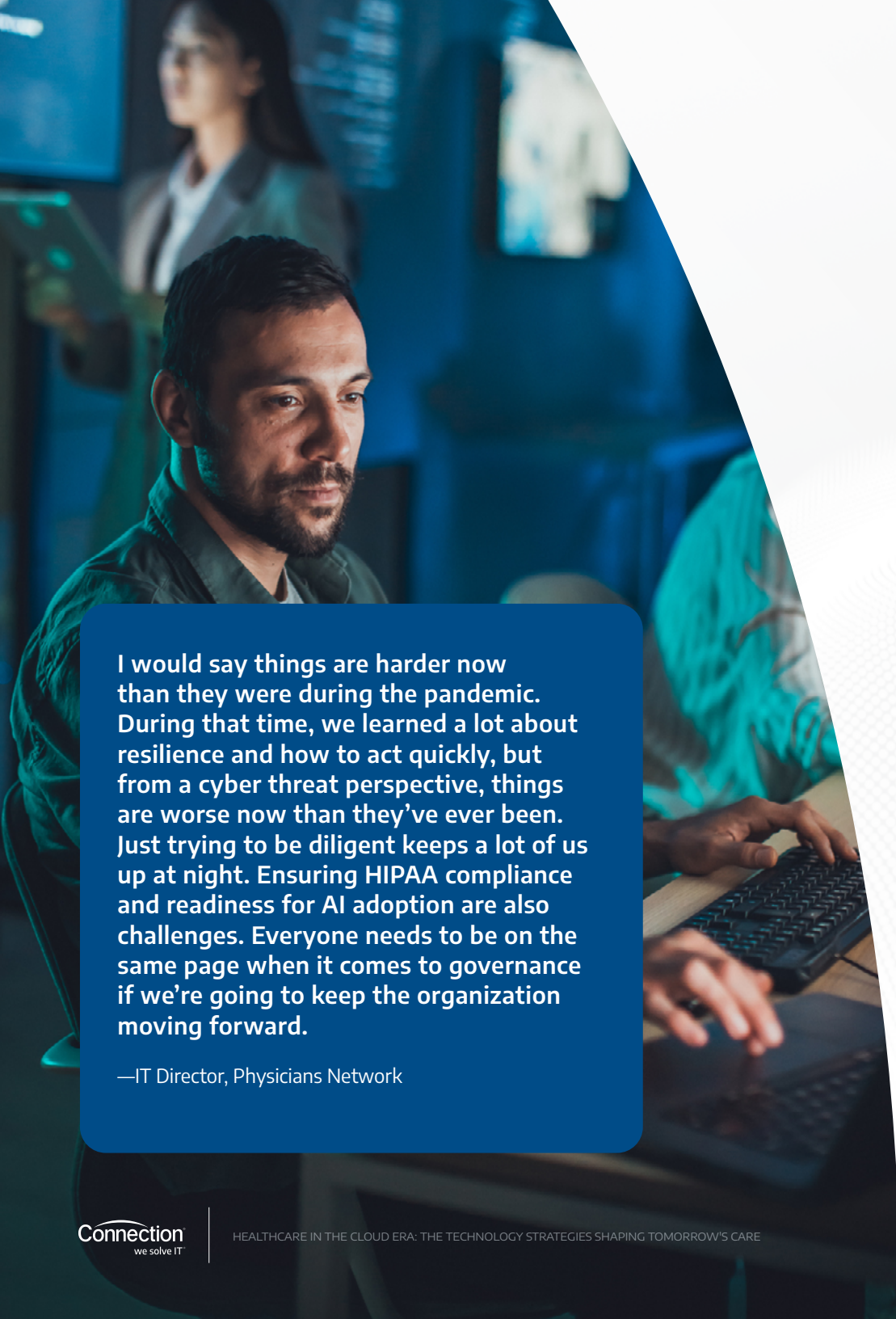
Real World Cost Optimization with Azure

- **Mayo Clinic** moved large-scale research and analytics workloads to Azure, allowing teams to scale computing resources on demand rather than maintaining excess on-premises capacity.⁶
- **Access Community Health Network** migrated more than 300 servers, including its EHR environment, to Azure to save more than \$300,000 in software licensing costs and more than \$400,000 in software refresh expenses annually.⁷
- By migrating, **Franciscan Health** improved its **Epic EHR** implementation to Azure performance while saving \$45 million over five years.⁸

⁶ Microsoft, "[Mayo Clinic and Microsoft Deliver a Powerful and Personalized Consumer Solution for Managing Health](#)," March 2019.

⁷ Microsoft, "[Access Community Health Network reduces costs with 11-month migration to Azure](#)," February 2026.

⁸ Microsoft, "[Franciscan Health improves care, saves millions with Epic EHR migration to Azure](#)," November 2025.



Operational Resilience and Compliance

The Challenge

According to the FBI, cybercriminals and ransomware operators target healthcare more often than other industries. In 2025, healthcare saw 44% more cyber events than the next most targeted industry, financial services.⁹ Ransomware remains among the greatest risks healthcare organizations face, threatening operational continuity and, by extension, patient safety. Attack volumes have increased 124% since 2024.¹⁰ The majority of these attacks rely on social engineering to harvest legitimate credentials that are then used to gain initial access to IT systems.

In response to mounting breaches, the Department of Health and Human Services (HHS) has proposed changes to the HIPAA Security Rule to better align its requirements with modern cybersecurity best practices.¹¹ HIPAA requirements notwithstanding, maintaining resilient technology systems that support uninterrupted care delivery is mission critical for healthcare provider organizations. Robust cybersecurity practices, business resiliency planning, and a proactive compliance posture support patient privacy, reliable care delivery, and the best possible experiences and outcomes for patients and providers.

I would say things are harder now than they were during the pandemic. During that time, we learned a lot about resilience and how to act quickly, but from a cyber threat perspective, things are worse now than they've ever been. Just trying to be diligent keeps a lot of us up at night. Ensuring HIPAA compliance and readiness for AI adoption are also challenges. Everyone needs to be on the same page when it comes to governance if we're going to keep the organization moving forward.

—IT Director, Physicians Network

⁹ Federal Bureau of Investigation, [Internet Crime Report 2025](#).

¹⁰ Kroll Advisory, [Data Breach Outlook](#), February 2025.

¹¹ U.S. Department of Health and Human Services, [Fact Sheet: HIPAA Security Rule Notice of Proposed Rulemaking to Strengthen Cybersecurity for Electronic Protected Health Information](#), December 2024.

Why Microsoft Azure is Changing the Game

Today's healthcare organizations need security solutions that are cost-efficient and effective and readily support HIPAA compliance. Microsoft Azure is natively integrated with Microsoft 365, already among the most widely deployed software in healthcare. License consolidation and bundling can help achieve significant cost savings.

In recent years, Microsoft has made multi-billion-dollar investments to embed cybersecurity into its cloud and AI services. The company has also developed and expanded its portfolio to include best-of-breed solutions.¹²

- **Microsoft Purview** integrates data security, governance, and HIPAA-ready compliance capabilities to help healthcare organizations protect their most valuable information without slowing innovation.
- **Microsoft Sentinel** is an AI-ready, cloud-native SIEM solution that collects, correlates, and analyzes security data from across an organization's Azure and multi-cloud environments. Together, these solutions enable ongoing security monitoring, supporting both HIPAA compliance and business resilience.
- **Azure Site Recovery** and **Azure Backup and Availability Zones**—both specific to Azure—enable rapid recovery from cyber incidents, outages, and other issues and make it possible to achieve near-continuous uptime for EHR systems and other core operational software.

All of the physical, technical, and administrative security safeguards required by HIPAA and the HITECH Act are available and in scope within Azure services. Microsoft automatically includes a Business Associate Agreement (BAA) for covered entities in its standard licensing agreement.

Expert partners like Connection maintain ongoing HIPAA attestation and can provide audit-ready documentation to demonstrate that necessary safeguards are in place to handle sensitive health information securely.

Real-life Resilience: St. John's Hospital Modernizes IT and Security to Improve Clinical Care

A small community hospital in Jackson Hole, Wyoming, St. John's Hospital (SJH) serves the town's 20,000 year-round residents as well as millions of visitors that flock to the area annually. Located in a remote but congested region, SJH faced unique challenges in delivering high-quality care. To protect care access for patients who would otherwise have to travel long distances to another facility, SJH needed a robust strategy for mitigating cyber risk and maintaining business continuity.

The organization's IT team partnered with Connection to implement a security-first approach to application and device management. The team conducted a vulnerability assessment, built out business continuity plans, and ran downtime drills to ensure operational readiness. By updating its cybersecurity strategy, SJH made significant progress in closing security gaps, an improvement that has since been recognized by accreditation bodies. Through vendor and license consolidation, SJH has been able to save \$250,000 while implementing new technologies, such as ambient listening, that significantly improve patient care and provider experience.

¹² Microsoft, "[A new world of security: Microsoft's Secure Future Initiative](#)," November 2023.

Hybrid Cloud Strategies

The Challenge

Healthcare organizations are embracing the cloud for its agility, scalability, and ability to support innovation, with adoption growing steadily for more than a decade.¹³ However, most cannot move their mission-critical systems entirely to the cloud. Legacy infrastructure remains central to clinical operations for many provider organizations, while others are wary of the downtime risks of cloud migration.

Yet these organizations still need access to modern computing capabilities. AI, analytics, and digital patient engagement all require scalable infrastructure.

Because they combine the advantages of cloud and on-premises infrastructures, hybrid architectures are increasingly recognized as the path forward. This model enables healthcare organizations to modernize selectively while maintaining control over sensitive workloads.

Hybrid infrastructures, however, can be more complex to manage than on-premises or cloud-only environments. There's a need to secure and govern assets across on-premises infrastructure, multiple edge environments, and the cloud. Many healthcare IT departments have resource constraints, leaving them ill-equipped to handle this complexity.

In the CHIME survey, two thirds of respondents said that cloud or hybrid infrastructure has somewhat (50%) or significantly (16.5%) strengthened their resilience.

We're taking advantage of various cloud capabilities and cloud services. We're using multiple cloud providers. We work with a shared risk model. We're looking to minimize our on-premises footprint. But it will never be zero.

—CIO, University Health Sciences

We are officially multi-cloud, in the sense that we work with multiple cloud providers, but I would not say we are multi-cloud in the truest operational sense. It's not like we have workloads that we can shift from one cloud to the next, back to on-prem, then back to the first cloud provider, etc. Essentially, once we define where we're going to be delivering a workload, that's pretty much static. We're not nimble and flexible in that way.

—CIO, University Health Sciences

¹³ Forrester Research, "[The Future of Healthcare Is in the Cloud](#)," June 2025.

Why Microsoft Azure?

Most hospitals and health systems prioritize EHR system functionality when evaluating infrastructure models. This can dissuade them from moving software that must interoperate with the EHR to the cloud. Security and compliance concerns can also inhibit cloud modernization. One solution is to store PHI in an on-premises data center and move less sensitive workloads to the cloud. Microsoft Azure offers answers to these challenges.

- **Azure Local** is a distributed infrastructure solution that makes it possible to run virtual machines (VMs), containers, and Azure services on validated on-premises hardware or at edge locations. This extends Azure's capabilities beyond the public cloud. Azure Local has more than 300 security settings enabled by default and is natively integrated with Microsoft Defender.
- **Azure Arc** enables unified management of distributed infrastructure, allowing hospitals to run workloads consistently across on-premises data centers, edge sites, and the Azure cloud while maintaining regulatory compliance and without introducing latency into sensitive clinical systems.
- **Azure Migrate** can simplify the migration of legacy clinical applications and clinical systems to modern environments, ensuring minimal disruption to operations.

An expert managed services partner like Connection can reduce the burden of migrating to, managing, and optimizing hybrid cloud environments. Connection offers architecture design services, migration services, and **Azure managed** services, and conducts workshops to help clients assess their cloud environments.

Connection holds the **Azure Expert MSP** certification, a distinction achieved by fewer than 1% of Microsoft partners worldwide. Earning this elite certification indicates proven processes, technical expertise, and operational maturity needed to manage complex Azure environments at scale. It is evidence that Microsoft has validated that partner's ability to maintain security, compliance, and robust data governance across Azure infrastructure and services. An Azure Expert MSP will have extensive knowledge of all Azure capabilities and services, including those that reduce operational burden and accelerate modernization.

Conclusion:

Will moving to a cloud or hybrid solution solve all the problems in healthcare today? Of course not. But it can simplify the path and enable facilities to focus on the true aim of healthcare: quality care that is accessible and affordable.

Hybrid Cloud Built Around Real Healthcare Workflows

Expert partners like Connection can design a hybrid architecture that gives healthcare organizations all the advantages of cloud and on-premises deployments while integrating Microsoft security and governance everywhere.



How Connection Can Help



Anything as a Service is a long-term strategy that helps IT teams reduce complexity, improve security, and support modern work. By starting with one or two high-impact service areas, organizations can modernize confidently while controlling costs and minimizing operational strain.

Connection supports IT leaders with deep expertise across:

-  Device lifecycle management
-  Communication and collaboration tools
-  Cloud resiliency and infrastructure
-  Managed and monitored services
-  Cybersecurity and compliance

Connection offers assessments, solution architecture support, procurement and deployment coordination, and ongoing operational management to help organizations build and maintain a scalable XaaS roadmap.



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