5 Steps to Support Successful EHR Migration to the Cloud

Working with the right partners is key to achieving increased agility, security, innovation

Healthcare organizations (HCOs) are facing unprecedented change that is affecting the industry at every level:

- Population health is continuing to evolve, with chronic health issues and emerging infectious diseases such as COVID-19 presenting new challenges
- Methods of healthcare delivery are changing, from the increasing use of genomics data in diagnoses and treatment to the deployment of telehealth and other virtual healthcare delivery methods
- Revenue cycle management is being impacted as payment models change and profit margins shrink
- Advances in digital diagnostics, such as advanced medical imaging and sensor devices, are driving improved health outcomes. The resulting exponential growth in data, however, requires sophisticated analytics and management.

The key to meeting these challenges lies in organizational agility. HCOs must be able to rapidly adapt to succeed in today's competitive healthcare environment.

One of the most impactful steps an HCO can take to ensure organizational agility is to adopt a cloud strategy. "Healthcare organizations need to be flexible to address evolving business needs and transform healthcare," said Hina Patel, Chief Growth Officer, US Health and Life Sciences, Microsoft. "The most compelling reason to move to the cloud is agility."

Adopting a cloud approach begins with moving the engine of an HCO's technology infrastructure — the EHR — to the cloud. Many leading HCOs have already migrated their EHRs to the cloud. The following steps, drawn from their experiences, can help ensure the successful migration of an on-premises EHR to the cloud.

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Step 1: Understand and communicate the business case.

Migrating an organization's EHR to the cloud is not just an IT decision: it is a *strategic business decision*. "The first step should be for the organization to decide the business outcomes they are looking for with an EHR cloud migration and then evaluate how these fit into their overall cloud strategy and journey," said Patel.

Some benefits of migrating to the cloud include:

- **A more responsive technology infrastructure** that eliminates delays associated with procuring and managing on-premise systems
- **Increased scalability** that enables HCOs to rapidly expand the reach of the EHR system when needed, such as in the case of merger and acquisition activity
- **Enhanced security and compliance** when partnering with the right cloud vendor for solutions that enhance an HCO's security and compliance posture
- **Control over costs**, enabling HCOs to manage costs by scaling usage up or down as needed in response to changing circumstances
- **Accelerated innovation** with lower latency due to the proximity of the EHR to advanced data services, such as analytics and AI.

Migrating the EHR to the cloud requires collaboration across the organization. Consequently, it is important to identify and communicate the "why" behind the change to all stakeholders — from C-suite executives to clinicians and staff on the front lines of patient care. After all, IT is not the only area of the organization that will benefit from the transition: clinicians will experience improved data access speeds and patients will experience quicker service. Clear communication of these benefits will help support cross-organizational coordination.

Step 2: Engage the right partners.

Successful EHR migration to the cloud requires conversation and collaboration with three types of external partners:

1. **EHR provider.** The first conversation an HCO should have is with its EHR provider. After the HCO informs the EHR supplier (or partner) of its intention to move to the cloud, the EHR provider can identify and develop a configuration guide to facilitate the process.
2. **Cloud services provider.** Selecting the right cloud services provider is the next step in the process.[1] It is important to select a cloud services provider with expertise in healthcare, as well as one that has an established relationship with the HCO's EHR vendor. For example, cloud services provider Microsoft has an extensive history of supporting EHR cloud migrations, including the successful migration of 20 of 20 Epic environments to Azure for Pennsylvania-based St. Luke's University Health Network.[2]
3. **Technology services partner.** The right technology services partner facilitates deployment by providing the necessary "connective tissue" between the HCO, the EHR vendor, the cloud services provider and any other entities (e.g., ERP vendor) that will be integrated into the infrastructure while moving the EHR to the cloud. "Technology services partners can help with change management," said John Barto, Chief Digital Transformation Officer, US Health and Life Sciences, Microsoft. "They have the skills and expertise to manage system integration in a healthcare environment. After deployment, they can teach your staff how to manage it or they can augment your IT resources with managed services capabilities."

Step 3: Execute.

As with any significant technology infrastructure change, it makes sense to take a thoughtful and iterative approach to implementation. Experts suggest the following best practices when executing migration of an on-premises EHR to the cloud:

- **Evaluate the organization's network connectivity.** Robust, redundant connectivity is essential to support end-user access to the cloud EHR as well interoperability with third-party systems.
- **Partner with the EHR vendor to deploy the appropriate cloud configuration.** EHR vendors specify infrastructure requirements to ensure optimal EHR performance. This is just as true for cloud deployments as it is for on-premises deployments. It's important for HCOs to adhere to those

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specifications. "EHR providers are very prescriptive about the operational requirements of the EHR they produce. They do this to optimize performance for every doctor, nurse and care worker to ensure their ability to provide high-quality, timely care," said Barto. Developing the right cloud architecture is ultimately the result of collaboration between the EHR vendor, the cloud services provider and the technology services partner.

- **Collaborate with the cloud services provider to procure and integrate the right cloud resources.** In addition to possible network and availability requirements, the cloud services provider can provide unified identity across the EHR, business applications and collaboration solutions.
- **Work with the technology services partner to design and execute the migration.** The technology services partner can support HCOs through all phases of the process, from strategy to design to execution and all the way to post-implementation management.
- **Start with training environments; then incorporate production workloads.** Start with lower-level environments (e.g., test and development environments, disaster recovery) before moving full production to the cloud. "A best practice is to migrate non-production workloads to build migration and operational skills for your staff before moving the full production environment," advises Barto.
- **Optimize.** Implementation is an ongoing journey. Have a system in place to evaluate the results of the migration, including a feedback loop to support continuous improvement. By monitoring results, HCOs can continue to optimize performance and cost.

Step 4: Reskill the workforce.

Moving to the cloud has implications for an HCO's current IT team, including staff responsible for on-premises infrastructure, application support, security, privacy and compliance. It can also have implications for end users if the migration involves changes to the workflow.

"Change adoption is about getting people to open their minds to what it means to be operating in the cloud," said Barto. "They are going to be enabling the same functionality, but in a different way." For example, he said, instead of unpackaging a box for a server, putting the server in a rack, wiring it up, installing an operating system, etc., IT staff will "drag and drop and point and click."

The HCO's technology services partner has a role to play in ensuring the organization's workforce is prepared for these changes. A good technology services partner can help reskill staff whose expertise may lie in managing an on-premises data center to help them be effective working in the cloud. Staff will need to learn how to manage computing, storage and networking resources in a different way. "It can take a little bit of learning time to figure out how to operate inside the cloud to balance performance versus capacity versus cost," said Barto.

To realize the full benefits of migration, IT staff will also need to learn how to leverage the flexibility and scalability of the cloud to achieve existing goals and pilot new initiatives. Alternatively, the technology services partner can assume management of the cloud infrastructure. "This frees up IT talent previously spent maintaining and upgrading the EHR infrastructure to focus on enhancing patient care and delivering added business value," said Patel.

Step 5: Innovate.

Organizational agility is about more than simply being reactive to a challenging and changing environment: it is also about being proactive. Moving the EHR, as well as related applications and data, to the cloud can unleash nearly limitless opportunities for innovation. Cloud deployment enables innovation and data interoperability by placing the EHR and related data adjacent to advanced tools and technologies such as artificial intelligence (AI), natural language processing (NLP), text analytics and advanced communication and business process workflow analysis tools. "Having one's EHR in close proximity to this suite of technology can enable a health system to accelerate innovation to compete by offering new engaging experiences to health consumers and providers," said Patel.

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No matter what an HCO's unique mission, priorities and goals are, cloud deployment makes new tools, solutions and strategies available for meeting those goals. For example, after their successful migration of Epic to Azure, St. Luke's University Health Network leveraged Azure's capabilities to improve the organization's security posture and disaster recovery capabilities.[3]

"Moving to the cloud is an investment in innovation," said Barto. "If it is used appropriately, it can save the organization money. But the real value is that it provides organizations the agility to be competitive. You've got to out-innovate the people who are coming after your patients and your members. That's the mindset you need to go after it with."

To learn more about the benefits of moving an organization's EHR to Azure, watch our on-demand webinar here and visit https://aka.ms/EpiconAzure.

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