



Trends Shaping the Future of EHRs

A new study shows healthcare providers are eyeing cloud deployment and managed services providers to redirect focus on care innovation

As early adopters moved healthcare applications to the cloud, one essential platform remained firmly on-premises: electronic health record (EHR) systems. Even EHR vendors like Epic initially cautioned against migrating these mission-critical systems from an on-site datacenter into the cloud.

“The common advice at the time was straightforward: ‘Don’t move to the cloud.’ Running EHR solutions on-premises was seen as the only viable option due to the sensitivities around patient data,” said Dr. Tim Calahan, Director of Healthcare Product Strategy & Management, Virtustream, a healthcare cloud and managed services provider that is part of Dell Technologies.

However, much has changed in recent years, and today more Epic users are eyeing cloud-based models as they upgrade, replace or contemplate future EHR deployments, according to a new HIMSS Market Intelligence survey on cloud migration.¹ The same survey shows broader interest in hiring managed services providers (MSPs) to handle off-premises hosting, as well as outsourcing EHR maintenance and management as these massive systems grow in complexity.



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TIM NASH | Vice President, Global Healthcare Sales | Virtustream

"It's interesting to be sitting in the middle of an industry's digital transformation and watching the drive toward cloud adoption take place in such a short period of time," said Tim Nash, Vice President, Global Healthcare Sales, Virtustream.

More EHRs moving to off-premises cloud solutions

The HIMSS survey on healthcare cloud migration backs up Nash's observations. Researchers in March 2021 surveyed 105 healthcare executives and IT decision makers, more than

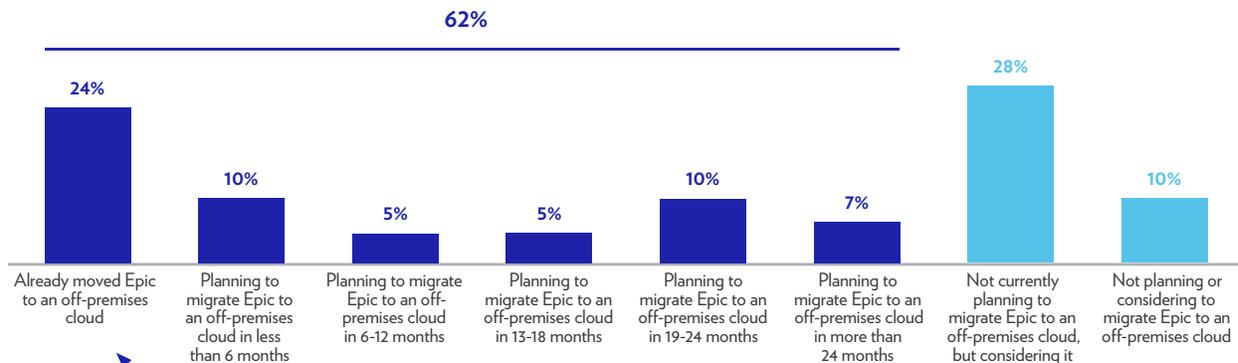
half of whom use the Epic EHR platform. Among current Epic users, almost a quarter were already using Epic in an off-premises cloud. Another 37% planned to do so within the next 24 months (Figure 1).

Epic's popularity among survey respondents didn't surprise Dr. Calahan. "Epic has methodically and slowly built out, and organically grown, application solutions within their environment, which means everything is designed from the ground up to work together," he said. "They also take great pains to understand how an application works from the healthcare provider and clinical perspective."

Figure 1. Just over 60% of current Epic users surveyed have moved or intend to move their EHR to a hosted cloud provider within the next 24 months

More than half of current Epic users are planning to migrate, or already have migrated, Epic to an off-premises cloud

In thinking about Epic and using an off-premises cloud to host that platform, are you...?



In particular, current Epic users with an IT budget between \$5M to \$15M already moved Epic to an off-premises cloud (43%), especially in comparison to those with a budget of \$5M or less (9%).

Base: Epic Current: n=58

Source: HIMSS Market Intelligence. April 2021. *Cloud Migration: Epic Current Users and Future Users* [survey, in partnership with Virtustream]. Chicago: HIMSS



Certain MSPs, like Virtustream, handle management up to the application layer, which is critical for those that don't have a deep bench of Epic-certified talent. A trusted MSP takes ownership of application management to help an organization get the highest level of value."

Tim Nash

HIMSS researchers also found 65% of healthcare providers considering Epic intend to adopt the off-premises cloud model. Those most eager to implement the cloud version plan to do so in the next 6 to 12 months, according to the findings (Figure 2).

As industry demand surged for a cloud-centric approach to Epic, Virtustream decided to develop its own HIPAA-HITECH and SOC2+HITRUST compliant cloud service to host mission-critical healthcare applications, including EHRs and ancillary applications. Aside from Epic itself, Virtustream Healthcare Cloud is now the largest hosting provider of Epic in the cloud.

Demand has only intensified since the pandemic, with more hospitals wanting secure, remote access to health records hosted in a protected and compliant cloud environment.

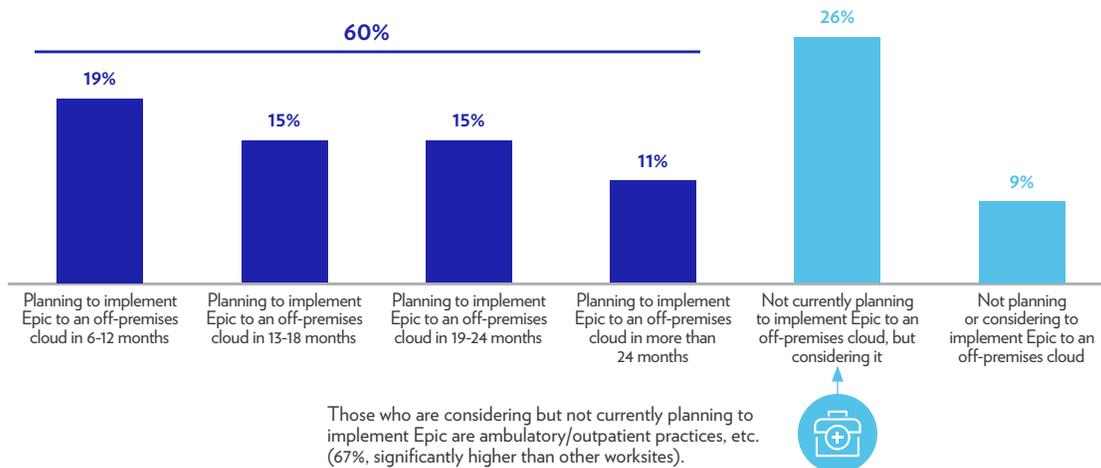
Moving toward expert EHR management

Another trend revealed in the HIMSS survey was growing interest in hiring outside EHR experts to help develop a cloud-first strategy, deploying software into a secured virtual environment and then managing systems to stay on top of updates and upgrades.

Figure 2. Hosting plans of surveyed providers considering Epic

Approximately 6-in-10 respondents, who are considering Epic, plan to implement an off-premises cloud*

When thinking about using Epic in the future, which of the following scenarios best describes your organization's anticipated hosting plan as it relates to off-premises cloud?



Base: Epic Future: n=47

*Small base size

Source: HIMSS Market Intelligence, April 2021. *Cloud Migration: Epic Current Users and Future Users* [survey, in partnership with Virtustream]. Chicago: HIMSS

Although 17% of current Epic users currently use an MSP for Epic, another 28% of respondents plan to use an MSP for Epic in the next 24 months – a growth of 164.71% for Epic managed services over this time period (Figure 3).

“MSPs help open the door to achieving the benefits of a cloud deployment while allowing staff and budget to be reallocated to other initiatives like digital care and innovations that lead to revenue-generating, new offerings,” Nash said. “Certain MSPs, like Virtustream, handle management up to the application layer, which is critical for those that don’t have a deep bench of Epic-certified talent. A trusted MSP takes ownership of application management to help an organization get the highest level of value.

“An MSP who is also the cloud provider can add value by reducing security risks through service-level agreements and additional services that strengthen an organization’s security and regulatory compliance posture,” he added. “If IT teams are pulled in multiple directions, they’re not always able to respond quickly to surprise upgrades. We shoulder that burden for our customers.”

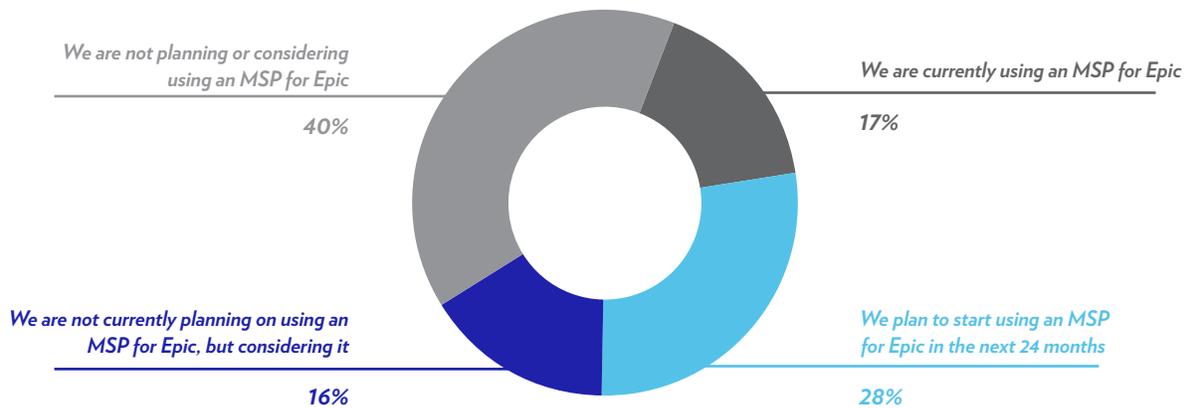
Expanding value and saving on costs

An IDC Business Value (BV) Solution Brief commissioned by Virtustream examined the business value of running Epic and ancillary applications in the Virtustream Healthcare Cloud.² The analysis included Virtustream’s xStreamCare Services™

Figure 3. Epic users currently use, are planning to use or are considering use of a managed services provider to support/update/ implement Epic

More than half are currently using, planning to use or would consider using an MSP for Epic

And, in thinking about your organization’s adoption of a managed service provider (MSP) to support/update/implement Epic, which of the following scenarios best fits?



Base: Epic Current: n=58

Source: HIMSS Market Intelligence. April 2021. *Cloud Migration: Epic Current Users and Future Users* [survey, in partnership with Virtustream]. Chicago: HIMSS

for EHR Platform that provides migration and managed services to assist healthcare systems with cloud-based Epic operations and optimization.

Among the key benefits the IDC BV Solution Brief cites, based on interviews with Virtustream cloud and MSP customers, were:

- **Significant cost savings.** Customers lowered their IT infrastructure costs by an average 32% compared to other IT environments, including those on-premises.

- **More efficient IT operations.** IT infrastructure teams spent 71% less time managing and running equivalent application workloads with Virtustream cloud.
- **Increased IT agility and performance.** Companies saw a 15% average productivity gain for application developers, based in part on significantly faster deployments of new IT resources.

“Healthcare organizations now recognize that they must have IT infrastructures that allow them to respond to changing patient expectations, service demands and industry requirements



The value of running Epic is that everything is made by Epic, so you don't have the interoperability issues that occur in other competing EHR solutions."

DR. TIM CALAHAN | Director of Healthcare Product Strategy & Management | Virtustream

without sacrificing security or performance," the IDC analysts concluded. "These continually shifting needs have led them to consider the value of cloud-based platforms, especially with hosting partners that can provide high-level expertise in Epic and other healthcare applications."³

Security, cost and hosting issues among top barriers

Security and compliance always remain a top concern for healthcare organizations, including those moving to the cloud. After all, nothing is more mission-critical than the EHR used in all areas of patient care.

In the HIMSS survey, healthcare organizations still on the fence were most concerned, on average, with security and privacy risks, as well as medical fraud, when weighing whether to move their

EHR system to the cloud. They also were apprehensive about the costs associated with such a big move. Another major barrier for current Epic users related to the ability to host non-Epic applications alongside their core EHR in the cloud (Figure 4).

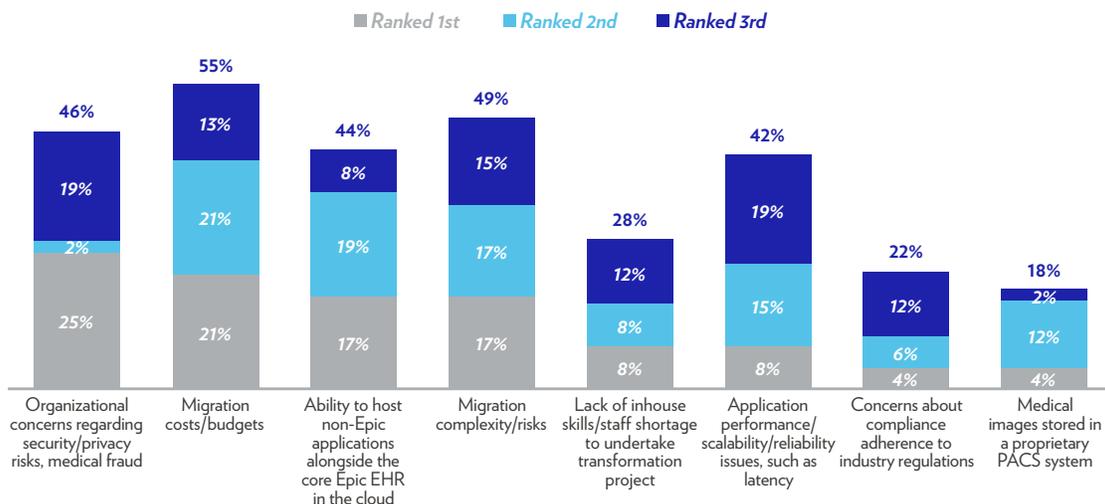
Interestingly, potential Epic users surveyed worried less about security and more about costs and application performance issues (Figure 5). Virtustream's Dr. Calahan believes the findings reflect past pain points with application interoperability.

"The value of running Epic is that everything is made by Epic, so you don't have the interoperability issues that occur in other competing EHR solutions. Other EHR solutions often grew through acquisition, so synchronizing those disparate systems can be challenging," he said. "I think that's why you see that disparity between future and current Epic users in the study."

Figure 4. Current Epic users raised concerns primarily with privacy and security risks, migration costs and application hosting and performance issues. They were least concerned with regulations and medical imaging storage

For current Epic users, security, cost and hosting non-Epic applications alongside Epic applications are among the top barriers when thinking about the migration of Epic to the cloud

When thinking about your migration/implementation of Epic to the cloud, what are the top 3 barriers you experienced/you anticipate:



Base: Current Epic and planning or considering to implement Epic as an off-premises cloud: n=52

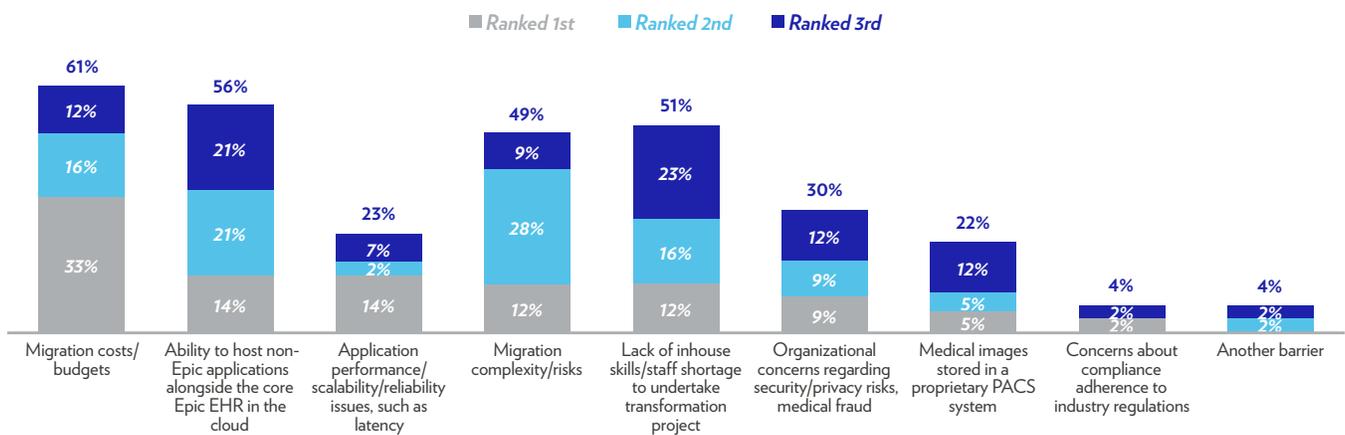
Source: HIMSS Market Intelligence. April 2021. *Cloud Migration: Epic Current Users and Future Users* [survey, in partnership with Virtustream]. Chicago: HIMSS

When selecting a cloud or services partner, talk to healthcare organizations who have taken the leap and discover their delivery and deployment challenges, which will further improve planning and evaluation.

Figure 5. Possible future Epic users are most concerned about costs, ability to host non-Epic alongside Epic applications, performance and inhouse skills/staff shortage among the barriers ranked first

For possible future Epic users, cost, ability to host Epic alongside non-Epic applications in the cloud, application performance and inhouse skills/staff shortage among barriers ranked first*

When thinking about your migration/implementation of Epic to the cloud, what are the top 3 barriers you ... anticipate?



Base: Future Epic and planning or considering to implement Epic as an off-premises cloud: n=43

*Small base size

Source: HIMSS Market Intelligence. April 2021. *Cloud Migration: Epic Current Users and Future Users* [research report, in partnership with Virtustream]. Chicago: HIMSS

Picking the best path forward

Achieving cloud success requires solid planning and proper evaluation of options and offerings. Both Nash and Dr. Calahan agree: This process shouldn't be rushed.

Among recommended criteria for selecting the right cloud and MSP:

- **Knowledge of a chosen application.** For Virtustream, being a part of Dell Technologies enabled the company to leverage a wealth of internal knowledge as it built out its Healthcare Cloud. Look for similar depth of expertise during vendor evaluations.
- **A mature delivery system.** Quality and security assurance are essential. Virtustream has hosted mission-critical applications for more than a decade and has worked with several healthcare providers and payers to implement or migrate Epic applications in the cloud. When selecting a cloud or services partner, talk to healthcare organizations who have taken the leap and discover their delivery and deployment challenges, which will further improve planning and evaluation.
- **Security and compliance.** The company's security and compliance services, as well as the Trust Platform, allow for near-real-time security reviews and remediation plan development. This is important to maintaining a strong proactive security and regulatory posture.

- **Broad hosting capabilities.** Most healthcare providers want to move more than their EHR into the cloud, so be sure to select a vendor with the agility, toolset and hosting experience to handle any and all applications and workloads destined for cloud environments. This will only grow in importance as EHR vendors expand functionality such as virtual assistants, natural language processing and artificial intelligence, which can cause skill gaps due to the new nature of the technology.
- **Expertise in a chosen platform.** Not all organizations can afford to create an in-house team of experts to manage all IT aspects of specific software, especially highly complex EHRs. Make sure a chosen partner is an expert in all areas and aspects of an EHR – from expert installation of the application to providing timely and smooth upgrades.

“Talk to people in the industry who’ve done it before,” Nash advised. “Early adopters can share lessons learned; current customers can share best practices and key learnings. Leverage all of that knowledge as you properly plan your journey to the cloud.”

Discover Virtustream’s Healthcare Cloud Solutions here: virtustream.com/healthcare-cloud-solutions.

References

1. HIMSS Market Intelligence. April 2021. Cloud migration: Epic current users and future users [survey, in partnership with Virtustream]. Chicago: HIMSS.
2. IDC Business Value Solution Brief sponsored by Virtustream, The Business Value of Running Epic and other Applications in the Virtustream Healthcare Cloud, IDC Doc. #US47201221, January 2021.
3. Ibid.



About Virtustream

Virtustream LLC, a Dell Technologies business, is the enterprise-class cloud company that is trusted by organizations worldwide to migrate and run their mission-critical applications in the cloud. For enterprises, service providers, healthcare organizations and government agencies Virtustream’s xStreamCare Services™ expertise combined with the Virtustream xStream® Management Platform and Infrastructure-as-a Service (IaaS) meets the security, compliance, performance, efficiency and consumption-based billing requirements of complex production applications in the cloud – whether private, public or hybrid.

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