



# Care Providers Ascend to Cloud for Medical Imaging Needs

For healthcare providers considering shifting the storage of their patients' images into cloud environments, there are a lot of options. This handbook explores why providers are turning to the cloud and how that trend affects picture archiving and communication systems and vendor neutral archives.

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## Cloud Imaging Crafting Healthcare Niche

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**RECENTLY, I RECEIVED** word that a Search-HealthIT story about cloud medical imaging storage had generated quite a bit of interest on our Twitter account and that we should keep promoting the article on social media.

That news didn't surprise me, because it seems like many areas in which cloud plays a part—through features such as Web-based storage, software as a service (SaaS) and platform as a service—could benefit healthcare. And imaging is among those at the top.

The numbers are part of the reason: You and I know just from everyday life how much more memory a digital photo takes up than, say, a text-only document. Imagine trying to archive images on a server from a year's worth of hospital MRI scans.

The [Twitter-friendly article](#) I mentioned, by contributor Reda Chouffani, anchors this handbook on cloud imaging benefits, including how to use options like SaaS with your vendor

neutral archives (VNAs) and picture archiving and communication systems (PACS), which traditionally are on premises.

Chouffani's column imagines cloud storage perhaps replacing VNAs and PACS, although I think it's more likely the cloud will augment such systems. Either way, the benefits he outlines for cloud storage—such as access to images from anywhere and the ability to scale a system—ring true.

One of the underlying criticisms of cloud services in healthcare is security, particularly as it concerns HIPAA-protected patient information found in medical images. In this handbook, reporter Kristen Lee looks at the [general HIPAA implications](#) of cloud computing in healthcare, centering on a case study from a long-term care chain that has gone 100% to the cloud. As for concerns about security in such an approach, CIO Shawn Wiora told Lee he feels cloud worries are overestimated. "There are no

fire-breathing dragons in the forest,” he said.

Chouffani returns to wrap up our collection with a look at the virtues of [VNAs compared to PACS](#). His conclusion is that while such systems can co-exist, VNAs hold the upper ground because of their ability to improve collaboration; better manage image storage; and give superior viewing capabilities. Do you agree?

Combining VNA advantages with potential

cloud storage makes for a strong foundation for enterprise image strategy. However, regardless of an organization’s choice of VNA, PACS or other potential image management technology, the cloud no doubt offers a chance to boost workflow and efficiency. ■

SCOTT WALLASK

*Editorial Director, SearchHealthIT*

[@Scott\\_HighTech](#)

# Flexibility of Cloud Appeals to Healthcare Providers

**INVESTMENTS IN STORAGE** hardware in healthcare have increased and health IT directors are actively considering turning to cloud providers to evaluate cloud's viability for long-term storage. They are doing this in response to the growing collection of diagnostic images and the long retention policy associated with HIPAA, which necessitate a larger amount of storage.

It is common practice for medical images to be archived after a certain period of time. Most picture archiving and communication systems (PACS) products are designed to offer a cheaper archiving option, with older images being pushed off to cost-effective storage destinations. Vendor neutral archives (VNAs) are also used by healthcare facilities as a way to consolidate image archives, regardless of the PACS systems in place. In addition to PACS and VNAs, cloud medical imaging services offer a flexible alternative to the on-premises options.

Some manufacturers of ultrasound equipment support cloud connectivity. This means that some of the images generated by that equipment go straight to cloud providers or vendors and aren't hosted internally. Various health IT departments have also adopted cloud-hosted products for their different workloads, and successes with these implementations gave some of them the motivation to evaluate cloud medical imaging options. Vendors such as Amazon, Google and Microsoft offer low-cost storage and security assurances that appeal to healthcare providers looking for a new storage method. Here are some of the benefits of using cloud medical imaging:

## **ADVANTAGES OF THE CLOUD**

Cloud services make medical images accessible from anywhere and on different devices.

This flexibility simplifies the process of connectivity. While upholding appropriate security measures, a cloud imaging system can provide access to data without any additional network complexities.

Whether storage space needs to double or triple, an IT team can scale its storage and other resources with only a few clicks when operating in the cloud. This eliminates the need for any major hardware expenses and shortens the length of time it will take the IT department to adjust any old processes.

Medical imaging data is typically larger in size compared to other health data sets. This means the backups and disaster recovery (DR) systems must have enough capacity to keep copies of the data in case of system failure and data corruption. With the cloud alternative, healthcare entities are putting the DR burden directly on the service provider. Most service providers offer data redundancy across multiple data centers, as well as additional retention capabilities to ensure the data is protected in case it ever must be restored.

Another desirable feature of cloud products

is that clients only pay for what they use. This is especially helpful in the radiology space, since images are not frequently accessed after initial readings and interpretations. This means the primary costs of the system are the result of the initial data or image load, which helps lower costs for healthcare groups.

Despite the appeal of the cloud, there can be challenges associated with its implementations. Installing cloud products requires appropriate planning and a strong understanding of what is being offered by the cloud providers. Knowing the correct storage plans, connectivity requirements, available data protections, compliance certifications and support are a few areas that must be thoroughly evaluated before making an investment in cloud services. It is also important to identify any initiatives in which images are shared with other groups, such as health information exchanges, as those transactions can affect overall costs. The upside of cloud services can be quickly eclipsed by the burden of data download fees if sufficient planning isn't done ahead of transitioning to the cloud. —Reda Chouffani

## HIPAA Not an Obstacle in Cloud Deployment

**CREATIVE SOLUTIONS IN** Healthcare Inc. may be the only health organization at present that completely operates in the cloud.

“We are the first healthcare company, to my knowledge, that is 100% in the cloud,” said Shawn Wiora, CIO at Creative Solutions, based in Fort Worth, Texas.

The company was founded in 2000 and currently owns and operates dozens of skilled nursing facilities and assisted living facilities.

Wiora explained that Creative Solutions currently has 43 different applications in the cloud, including its EHR, accounting applications and maintenance software. He said Creative Solutions’ HR office system is now being hosted with Ceridian Dayforce, and its EHR is being hosted with PointClickCare. The company has been 100% in the cloud since the beginning of 2015.

“The challenge that I’m putting out there in the industry is that I’m putting all of my

[healthcare] CIO and CISO peers on notice that there’s nothing in HIPAA that prevents you from going to the cloud,” Wiora said. “I’ve been very public about the fact that if you’re not in the cloud, you’re doing a disservice to your patient.”

Moving to the cloud, Wiora said, has allowed Creative Solutions’ healthcare organizations to focus on their residents rather than focusing on and worrying about things like servers.

“The cloud takes all of that patching and server and mundane IT activities that have been going on for 30 years and just kind of automates it so we can ratchet up new applications on demand. And we can be very responsive to the business unit when they’re implementing all this new technology,” Wiora said.

Cloud computing in healthcare allows organizations to get back to focusing on treating patients and residents, said Judy Hanover,

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research director of provider IT transformation at IDC Health Insights, a research firm in Framingham, Mass. “It allows them to focus on their core business and to really access best of breed technology,” Hanover said.

This approach is becoming increasingly necessary for healthcare organizations due to the shift from fee-for-service models to value-based care. The cloud also helps providers keep up with regulatory changes, Hanover said, which happen every year and require healthcare organizations to adjust quickly.

“It’s really changing the way that they operate, and so it’s dictating the need for different types of technologies and different types of operations,” Hanover said. “Having a cloud-based architecture allows them to access technology as a service and to really put it into use fairly quickly, more so than they would if they had to upgrade their infrastructure on site.”

### **MOOD CHANGES ON CLOUD COMPUTING**

IDC has found that more and more health IT leaders—such as CIOs, CMIOs and IT

directors—are becoming increasingly comfortable with cloud computing in healthcare.

In a recent research survey of IT leaders from hospitals with 200 beds or more, Hanover said IDC found that 41% of respondents were more comfortable with the cloud now than in 2014. Hanover said this is a significant increase from the 31% who said they were more comfortable in 2014.

**“The growing consensus is the cloud can be more secure than an on-premises environment.”**

—JUDY HANOVER, IDC Health Insights

Furthermore, 46% of respondents said they’re using cloud in production today, 10% said they are planning to implement the cloud, 15% said they are planning to use the cloud in 2016 and 10% said they are currently running pilots.

When it comes to cloud security, Hanover said, “We definitely are starting to see a better track record for the cloud, and healthcare CIOs are starting to see that.”

“The growing consensus is the cloud can be more secure than an on-premises environment,” she added.

### HIPAA AND THE CLOUD

One common concern among many professionals within health IT is whether the cloud meets HIPAA requirements.

To those who believe cloud computing in healthcare is not and will never be HIPAA compliant, Hanover replied: “That’s absolutely incorrect.”

And Wiora agreed.

“When I hear my peers talk about how you can’t go to the cloud because of HIPAA, you know what that reminds me of?” Wiora said. “That reminds me of when I was in seventh grade. I remember a teacher told me a story about how in the Middle Ages, people in the

villages in Europe wouldn’t go into the forest at night because there were fire-breathing dragons. There are no fire breathing dragons in the forest.”

In fact, HIPAA does not refer to or require any specific type of environment, Hanover said.

Rather, “It relates to how you treat designated protected health information, it refers to doing a security audit to understand where that information is, [and] it refers to how you encrypt that data, how you manage that data, and how it’s protected,” she said.

Hanover also pointed out that the additional HIPAA omnibus rule that was added in 2013 specifically provides regulations for working with service providers, which includes cloud service providers.

Therefore, Hanover said, the “notion that HIPAA doesn’t include the cloud is absolutely false.” —*Kristen Lee*



## The Collaborative Promise of VNAs

**AS A RESULT** of shifting healthcare imaging requirements, vendor neutral archives have gained popularity among hospitals and health systems. A desire to increase the frequency of cross-facility data sharing is one of the primary reasons hospitals are looking into implementing vendor-agnostic enterprise-wide healthcare imaging platforms.

Vendor neutral archives (VNAs) enable many healthcare imaging services departments to overcome some of the challenges associated with picture archiving and communication systems (PACS). Traditional PACS create islands of medical imaging sorted by department that sometimes don't integrate with EHR systems. In addition, tremendous costs are associated with migrating data to and from different PACS platforms.

VNAs, alternatively, can serve as a single destination for all healthcare imaging data, regardless of the PACS or department of origin.

VNAs offer numerous benefits including collaboration, storage management and viewing capabilities.

One piece of meaningful use criteria mandates that healthcare organizations share imaging data with patients and other healthcare providers. Many of today's VNAs are well-equipped to help providers meet this criterion because they are built to interoperate with different EHRs.

Vendor neutral archives allow hospitals and health IT departments to consolidate their imaging storage. Reducing the number of individual silos where images reside by creating one centralized storage location—complete with advanced compression and disaster recovery capabilities—can lead to cost savings and improved data integrity.

The centralized repository of images that VNAs create has allowed user-hospitals to reduce the complexity and cost of migrating

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images. A VNA platform also can be the viewing source for images stored in PACS. And VNAs can enable healthcare imaging departments to roll out additional imaging platforms without having to spend excessive time and money on migrating data from legacy systems.

Although most PACS can be viewed via Web portals and mobile platforms, they still are localized to each individual department and product. A VNA serves as a single point of access across all disciplines and simplifies the process for both clinicians and patients.

VNAs offer great benefits, but they don't address every need in a healthcare organization's imaging strategy. To fill in the gaps, hospitals look for products in these areas:

- HIE and interoperability requirements that are part of stages 2 and 3 of the meaningful use program

- Referring physician and patient access capabilities
- Expansion of telemedicine services
- Consolidated storage and data management

Before selecting a VNA, an organization should evaluate its enterprise imaging strategy, as well as consider the business challenges that could be conquered by rolling out a VNA platform. By performing this pre-evaluation, a healthcare organization creates a more thorough plan for successfully implementing an imaging system that results in a positive return on investment and improves accessibility and security of stored imaging data. The end result could be a VNA that serves as a healthcare organization's image sharing and clinical content foundation. —*Reda Chouffani*

**REDA CHOUFFANI** is vice president of development at Biz Technology Solutions Inc. Follow him on Twitter: [@healthcareITGuy](https://twitter.com/healthcareITGuy).

**KRISTEN LEE** is news writer for SearchHealthIT. Email her at [klee@techtarget.com](mailto:klee@techtarget.com) and follow her on Twitter: [@Kristen\\_Lee\\_34](https://twitter.com/Kristen_Lee_34).

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Care Providers Ascend to Cloud for Medical Imaging Needs is a [SearchHealthIT.com](https://www.SearchHealthIT.com) e-publication.

**Scott Wallask** | Editorial Director

**Alex DelVecchio** | Site Editor

**Shaun Sutner** | News and Features Writer

**Kristen Lee** | News Writer

**Reda Chouffani** | Contributor

**Linda Koury** | Director of Online Design

**Martha Moore** | Senior Production Editor

**Stephanie Corby** | Publisher  
[scorby@techtarget.com](mailto:scorby@techtarget.com)

**TechTarget**  
275 Grove Street, Newton, MA 02466  
[www.techtarget.com](http://www.techtarget.com)

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