

# How Cloud Computing is Redefining the Healthcare Industry

An analysis of the effects of cloud  
computing technologies on healthcare

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White Paper



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## Introduction

Technology makes a tremendous difference in the lives of patients, their families, and healthcare professionals. Advances include immediate records updating, robotic and remote surgeries, the use of [reality technologies](#) and bridging accessibility and geographical gaps. The cloud is another technological advancement in healthcare that makes these and other benefits possible. With it, though, come concerns about privacy. Medical privacy is of the utmost importance in healthcare. HIPAA (The Health Insurance Portability and Accountability Act) makes this clear, but there are other concerns like the safety of Electronic Health Record (EHR) data.

In this white paper we summarize:

- **Electronic Health Records**
- **The prevalence of cloud computing in healthcare in the United States**
- **The benefits and risks of using cloud-based services in a healthcare setting**
- **How to mitigate the minimal risks inherent with cloud computing**

## Understanding Electronic Health Records

An Electronic Health Record is a chronological, comprehensive record of a patient's experience in any care delivery setting. It includes "patient demographics, progress notes, problems, medications, vital signs, past medical history, immunizations, laboratory data, [and] radiology reports" and more. The record is compiled using devices linked to the health system's network and provides many benefits ([HIMSS](#)).

An EHR gives both large- and small-scale insight into patient health over an illness or injury. All clinicians can see what is going on, what has been tried and other data like medication allergies and past medical issues that might have caused, or compounded, this issue.

The EHR travels with the patient throughout the future of their medical journey, creating a full profile of their health.



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### Cloud Computing in Healthcare

Technology and health care are synonymous. This is likely why over 83% of healthcare organizations in the US use some form of cloud platform --- beyond any other vertical ([True North ITG](#)).

But what is it about cloud-computing that makes it the right choice for healthcare? A major factor in why medical practices and health systems choose the cloud is its compliance with HIPAA. In fact, cloud-based services are the only way patients and health professionals can have both access to EHR and comply with The Act.

Healthcare is ahead of the curve when it comes to the cloud. While other verticals are in the adoption phase---bringing the cloud into their organizations and learning how to use it---healthcare is in the next phase: adapting the cloud to myriad uses. They are seeking vendors who understand not simply the application of the cloud, but the specificities of using cloud computing in a field that is so highly regulated, especially when it comes to privacy.



### The Benefits of Cloud Computing in Healthcare

The cloud benefits medical practices and healthcare institutions in a number of ways. Data is instant and accessible by anyone with access to the network. This lends itself to better collaboration. It also means that patients transferred to another hospital in an emergency arrive *after* their records - when seconds count. Patients referred to specialists and outside health systems also have their records sent ahead of time reducing the length of visits, which is an often-overlooked saving.

Additionally, the savings borne of the cloud means more resources are funneled where they should be: research, facilities, and health- and patient-related funding. Vendors of cloud-based systems are the ones responsible for hardware, software and connected upgrades, infrastructure support, security and storage ([Armbrust, Fox et al.](#)).

The cloud is scalable and flexible, reducing the problem of paying for unused software or server space. But there is more than a one-time cost and time saving. Traditionally, businesses that have underused servers lose money. If a \$2,100 server depreciates over three years, stopping using it (or not using it) for one year results in a loss of \$1,400 ([United States Energy Information Administration](#)). This penalty is non-existent with the cloud and, in fact, leads to recurring savings.

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### There are Risks With Cloud Computing

Cloud-computing isn't foolproof. But, in 2017, True North found that 98% of companies have never experienced a breach of security when using cloud services. Make sure that your medical practice is managing the cloud properly by implementing strategies and procedures that safeguard patient data.

### Mitigating the Minimal Risks of Cloud Computing

**Train Your Staff:**80% of security breaches are facilitated by human error ([Medical Economics](#)). That means your first line of defense is also your weakest link. Training is essential. Do not just expect staff to know how to keep things secure. Trainings should include:

- **Password Rules:** Create clear policy on password length, what types of characters must appear and how frequently passwords are changed.
- **Email Safety:** What are the [identifiers in phishing](#) and other email schemes.

**Use Appropriate Software and Update as Recommended.** Many medical practices do not update their operating systems. As an example, many places still use Windows XP which Microsoft no longer supports ([Medical Economics](#)). Operating Systems must be updated to stay on top of the latest security features. Additionally, patches should be installed when recommended. These prevent hacks and other breaches.

**Take Advantage of Security Settings.** There are security settings that designate roles to users. Some users can only view data while others can edit and input. Others may only have access to certain types of data. Setting up these roles allows better management of the cloud-based systems and patient data.

**Use Only the Cloud for Storage.** This might sound obvious but staff may not realize the tremendous risk downloading data onto their personal devices is. While BYOD policies are acceptable and lead to greater productivity, employees must:

- Follow procedures for remote access, including which types of networks they can access the system on and how to keep information out of view.
- Never download private data.

**Monitor Access, Use and Risk.** Healthcare institutions must perform check ups on their cloud regularly. Access logs are the quickest way to find anomalies: users accessing the network from foreign IP addresses at strange times or for a short duration can signal a breach. Employees visiting unsecure or unsafe sites put your network at risk and must be addressed. Auditing for risks is the easiest way to stay ahead of the curve.

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### Transform Your Real Estate Firm with CRA

Medical practices have tremendous responsibility. Keeping up with the latest in technology is part of the responsibility but there are shortcuts. Managed services allow informational technology experts to manage software and security. These outside companies work as needed, saving money and allowing resources to be directed toward patient care, compliance and managing a practice. Computer Resources of America provides risk audits and works with medical practices in the New York City area to manage their private data and networks. Allow our team of professionals to provide your practice with the IT services that will keep you up to date, save you and your patients' time, and saving you the worries of technology solutions, all while saving you money. [Contact us](#) today for a free evaluation!



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