

How Cloud and Video Will Shape the Future of Telemedicine

A CTI Connect White Paper

Executive Summary

Cloud technology, video conferencing, and telepresence has infiltrated nearly every industry and business—including healthcare. You might think such a high-touch, personal field like medicine would not lend itself to long-distance communications, but telemedicine continues to grow, with the latest technology driving costs down and making the process affordable to more healthcare providers and their patients.

The number of people using telemedicine has increased steadily over the years. From 2000 to 2016, 230 telemedicine companies launched. As of 2015, the top 10 telemedicine companies in the United States [earned more than \\$350 million combined](#). Current reports estimate that telemedicine's influence will swell in 2017. Accenture predicts that the industry will quadruple by then, with [annual investments up to \\$1 billion](#).

In addition, several health insurers now cover telemedicine, placing it on par with traditional doctor visits. For example, [United Health Care Today currently covers](#) telemedicine from Doctor on Demand, American Well, and Now Clinic. Under their policy, patients pay only their usual copay, making virtual medicine more affordable for both doctors and their patients.

In fact, insurance companies in most states will reimburse virtual doctor visits. Government-mandated health reforms ensure this number will steadily increase over time. Telehealth parity laws, which eliminate many limits formerly placed on telemedicine providers, are [currently in effect in 30 states](#). These laws also clarify the definitions of telemedicine and telehealth into specific, yet broad enough terms to encompass most patients' and health care providers' needs. Depending on the state, telemedicine may even apply to Medicaid and workers' compensation cases.

Video technology and cloud-based infrastructure are among the many initiatives helping facilitate the growth of telemedicine, however healthcare CIOs still struggle with the best way to use these services. In a [recent study, 57 percent of them](#) reported hybrid cloud technology as a critical priority. Securing data in the cloud in compliance with HIPAA requirements remains a key concern, as does ease of use of telemedicine systems for patients and healthcare providers alike. Yet, these challenges do not stop healthcare professionals from striving for easily accessible telemedicine solutions due to the benefits to both patients and providers.

The Benefits of Telemedicine

Telemedicine systems offer a number of tangible benefits, including:

- Reduced costs for care
- Improved accessibility to care, especially in rural areas and for lower income families
- Better patient morale
- Improved preventative and follow-up care



Photo Credit: [ccs_projects](#) via [Compfight](#) cc

Telemedicine also streamlines doctor's visits in a number of situations. Take a working mother whose child has chronic ear infections, for example. Instead of taking the whole day off from work, loading the child into the car, and heading to the nearest clinic, she can plan to go into work a few hours late. From her home, she can connect with one of 1,400 licensed physicians on her smartphone and receive an expedited diagnosis and prescription while avoiding the germs inside a doctor's office waiting room. If she has alternative childcare for her sick child, she can head to the office for half a day or more.

In other instances, telehealth isn't just convenient—it can be life-saving by allowing doctors to quickly diagnose a stroke victim's symptoms and suggest immediate action to minimize further damage to the brain, all without a costly, time-consuming emergency room visit.

For patients who are house-bound or who live in hard-to-reach or underserved rural areas, telemedicine provides access to quality doctors they wouldn't otherwise have.

Telemedicine Allows Patients to Take Charge of Their Care

Fast, convenient care represents just two of the many benefits of telemedicine. Patients and doctors agree that telemedicine often leads to an improved quality of care and more reliable patient follow-through.

Since they are speaking to a physician from the comfort of their own homes, patients are more likely to open up. They feel less stressed and more comfortable. The doctor gains a more honest assessment of patient health and expectations. Additionally, seeing the doctor face to face in a video conference, as well as being able to get back in touch with him at any time, increases the likelihood patients will follow recommendations and take their role in their own healthcare more seriously.

Of course, limits on physical exams do exist with a video-based doctor visit, but overall these “appointments” remain thorough and highly personal. Often, telemedicine represents the first step in the medical process, where the physician builds a rapport with a patient, takes the medical history, and assesses the patient’s overall appearance. This last part of a video visit helps physicians determine whether their patients need in-person attention. With this in mind, high-quality streaming video contributes to a more accurate diagnosis and we begin to recognize the important role the quality of the technology has in the quality of care.

Telemedicine Benefits Doctors Too



Photo Credit: [mannoo2000](#) via [Compfight](#) cc

In addition to the benefits telemedicine offers patients, videoconferencing enables health care providers to set their own schedules and maintain patient contact with less travel and less pressure to treat as many patients as possible in a set time. Unfortunately, many doctors' offices today are run like assembly lines to balance finances. The more patients a physician sees per day, the less likely he or she is to give full attention to each person's care.

Since telemedicine is so quick, yet so personal, physicians who use it can more easily maintain patient relationships, as well as their own mental and emotional health. Telemedicine also allows health care providers to extend their reach so they can stay competitive in their market. But providers must have the technology tools available to do so.

The Tools for Better Telehealth

Knowing the benefits of telemedicine, many providers today are frustrated because their practices' usage of telemedicine is too fragmented and doesn't deploy the latest technology.

For effective telemedicine services, healthcare providers require integrated, easy-to-use, scalable solutions. Small clinics and individual practices require affordable, easy-to-manage solutions. Today's cloud-based video technology provides exactly that for health care facilities of any size.

CTI Connect, in particular, brings videoconferencing into the cloud for affordable one-on-one videoconferencing or large group meetings. Traditionally, telemedicine calls were conducted over phone lines or the internet, requiring extensive bandwidth requirements for streaming video. Today, 85 percent of telemedicine conferences still take place in an audio-only manner, using traditional voice call technology. But cloud-based video solutions reduce bandwidth requirements and put videoconferencing capabilities within reach of nearly anyone—including patients in rural areas and lower-income populations. The lack of a need for infrastructure upgrades also benefits healthcare providers, as the smallest doctor's office up to the busiest hospital can use their existing IP for their telemedicine system.



Photo Credit: [Medicine](#) via [Compfight](#) cc

Today's solutions make it easy for patients and providers alike to transition from a desktop or laptop computer to a mobile device, such as a tablet or smartphone, seamlessly. Participants can join a videoconference or voice call with one click through a web portal, by downloading an app, or simply calling from any phone line.

Additionally, cloud-based videoconferencing technology makes collaboration amongst groups of physicians easier, as multiple participants can easily join a call to collaborate. Imagine a patient receiving a referral to a specialist. Either prior to or during the patient conference, the specialist can collaborate with the patient's primary care physician, creating additional perspectives on the patient's health that are more personalized than simply reading a chart—and time saving. Doctors can share X-rays, MRI and ultrasound results, and other visual data with a few clicks.

Physicians can also consult more easily on difficult cases with specialists across the country—or across the world—with no additional infrastructure requirements beyond their cloud-based videoconferencing system easily accessible from a desktop-based Mac or PC or any mobile device.

Streamline Office Operations with Cloud-based Videoconferencing

CTI Connect cloud-based videoconferencing solutions also help streamline office operations. Office staff can schedule appointments easily with a few clicks and patients can book their own appointments online by choosing from a doctor's available time slots.

Analytics can help office staff track usage of the system and note a doctor's busiest times. This enables staff to balance the physician's in-office hours with their telehealth service for maximum profitability and convenience.

The flexibility and potential cost savings that cloud services can offer are obvious benefits to healthcare executives facing ever-higher costs to collect, collate, and store vast amounts of digital data. With cloud computing, there are no limits to a system's scalability or flexible, without any of the costs associated with securely storing vast amounts of data.

Telemedicine and HIPAA Compliance

In spite of the many benefits, physicians share many questions about telehealth and its feasibility. One of the most common questions relates to the legality of telemedicine and whether it complies with the Health Insurance Portability and Accountability Act (HIPAA). Although telemedicine is legal in most states, HIPAA compliance can make it a bit more complicated.

Physicians must stay in constant communication with their telemedicine providers, especially cloud-based services, to ensure all service providers understand HIPAA compliance—and adhere to it—or risk massive fines. Health care providers [can prevent issues with a Business Associate Agreement \(BAA\), which](#) holds cloud providers and associated parties responsible if patient data is ever tampered with, misused, lost, or stolen.

Health care facilities' IT managers should ensure their cloud providers use highly sensitive access controls, such as biometric scans, master keys, and electronic IDs. These access controls do not simply block hackers; they protect data at the highest level. With these access controls in place, only specific health care workers can use telemedicine technology or access encrypted data. Additionally, service providers' data encryption should follow HIPAA compliance. [FIPS140-2 encryption](#) should be in place for both electronically-protected health information and any stored data. This includes data on hard drives, thumb drives, and backups.

Telemedicine enables health care providers to deal with HIPAA breaches more effectively. Today's HIPAA laws state that breaches of individual patient safety and security must be reported [no later than 60 days from discovery](#). HIPAA also states any personally identifiable health information must be secure at all times. Cloud-based telemedicine makes storing data and reporting breaches much easier, since health care providers can access data quickly, repair security breaches efficiently, and store data under different levels of security, as needed, while maintaining required HIPAA-level encryption.



Photo Credit: [NEC Corporation of America](#) via [Compfight](#) cc

CTI Connect's Cloud Based Videoconferencing Service Helps Launch Telemedicine into the Future

As telemedicine increases its reach across the U.S., cloud-based services will continue to play an ever-growing role in HIPAA-compliant telemedicine practices and the quality and efficiency of healthcare. The service you deploy should offer both health care providers and their patients the support they need to make telemedicine work for them. Cloud-based solutions should be extremely adaptable, provide multiple lines of communication, and work for both small clinics and large health care teams alike.

In addition, healthcare professionals, their IT teams, and vendor partners who serve them must master HIPAA compliance and ensure the security of patient data in the cloud.

Having a cloud-based service provider familiar with all aspects of HIPAA is crucial, as is having a service provider that understands laws regarding technical policies, security standards, and breach notifications. Most cloud-based technology must undergo rigorous security inspections

before, during, and after installation in a clinic. Any service you use should follow strict business associated agreements (BAAs) with each health care provider on its docket.

Technology is driving change in every industry—healthcare might just be the most exciting one. It's moving fast, and the pressure to change, adapt, and adopt to new ways of doing business in the healthcare space isn't going to go away. Even the most reluctant to embrace change and new technology will ultimately have to migrate to the cloud and master HIPAA compliance and security in the process. We can help; [connect with us today for more information](#).