

Cloud Computing Will Change the Way You Practice

Steven Kraus, DC, DIBCN, CCSP, FASA, FICC

Cloud computing will likely permanently change the way you interact with your clinic records and your software. This transition to data on the cloud, an Internet-accessible database, is going to shift the way you practice. Last month, I outlined a vision of how our profession could finally be recognized for our contribution to our nation's health - a future I believe is just around the corner. An important part of this vision is the way "computing on the cloud" is going to change the security and accessibility of our clinical and patient data.

Because cloud computing is going to change how data moves and is stored, it will change the way we practice in three ways: (1) Our data back-up is going to be less costly and easier to maintain, which will drive down the overall cost of documentation. (2) Our data is going to be more secure, which will make our records safer and more permanent. (3) Our data is going to be more accessible to us and our patients, which means faster response times for information requests and better clinical decision-making. And you can have relevant information from your electronic health record (EHR) accessible from anywhere in the world as long as you are connected to the Internet.

What Is Cloud Computing?



The best way to understand cloud computing is to consider the cloud as an Internet-accessible database of your clinic's patient charts and your practice management systems data. Cloud computing happens when the Internet itself becomes the connecting method where your data is stored and managed. No, this is not just opening a Web browser to check your e-mail account through your local cable mode, or setting up a fancy network with a server in your office. It is a little bit of both. And that is what makes it different.

First, cloud computing in the chiropractic office will not be like current Web-based programs. Currently, there are a handful of documentation and clinic management products that are managed completely on the Internet. You access the software through a Web browser, you sign in through a Web browser, and rather than anything being stored/downloaded locally on your computer (including the software), everything is located out on a Web server. Those of you who have them or have tried them have a clear picture of how they work. For the rest of you, just imagine signing into a retail-store Web site to access your EHR data to do a SOAP note to get an idea of how they work. They are similar, albeit slower and not as graphically rich in content.

Second, cloud computing is not like the current computing model whereby the software and the data is stored within the four walls of your clinic (the system that most of us are used to). We have a handful of computers, and for these computers we buy a handful of software programs with multiple licenses. When we want to use this software, we install it in our machines in our offices and go from there. Larger clinics, savvier clinics, and clinics going completely digital will set up an internal network, with all the computers sharing files and data and hooked up to an internal server. It's also called the "client-server" model.

Benefits and Weaknesses

Any system has its benefits and drawbacks, and so it goes with the Web browser-based model and the client-server model. The major benefit of the browser-based model is obvious to anyone who has ever tried this kind of software interaction - it's simple. There's no extensive software to install and not a lot of hardware to buy. You need access to the Internet through a local cable modem or DSL service, and off you go. However, this simplicity does come with a price; the software itself is simplified because its speed depends on the speed of an Internet connection. The software cannot be as graphics-heavy and robust because with every scroll of the screen, the browser has to reload.

The strengths and weaknesses of the client-server model are actually opposite of browser-based software. The client server is faster and can be graphics-heavy because everything is stored locally. But that means it involves more hardware and infrastructure, and in digital clinics with electronic health records, the set-up and running of servers (which can get complicated depending on the situation). Servers also require an IT specialist to keep it running smoothly with the proper configuration.

Internet Computing With Power

Cloud computing effectively offers us the robust software that we are used to with the client-server model, along with the simplicity of the Web-browser model. Much of the software is stored on your local PCs. But the connection to the cloud servers means you can network your computers without a server inside your office. When you log on to your clinic software suite through your computer, you will be using the EHR software loaded on your PC for screen interfaces. You will be using the Internet to access the cloud servers for your database. The graphics and interface are loaded locally on your PC, but all the data itself is accessed from the Internet or "the cloud," making the process fast and simple.

Lower Costs, Easier to Access Data

With Internet-based data, you need less "stuff" to make your software work, and that means savings. I have seen firsthand the way the cloud model simplifies the process of establishing and implementing an EHR into a clinic. You do not need to set up a server in your clinic. With a few regular computers hooked up to the cloud through a local high-speed Internet connection, the office is ready to go. There is still some investment in the PC and the Internet to be turned on in your office, but these expenses were likely already present.

In addition to less hardware (as in no server required), there is the fact that cost of data storage is getting cheaper. As technology advances, we are able to save more and more data in smaller and smaller spaces. Your experience buying memory for a device like a digital camera reflects this. Today, you can buy 8 gigabytes worth of storage space for the same price you used to pay for less than 2 gigabytes. And this is combined with the fact that the [HIPAA-compliant](#) paper-file storage units, file folders, and all the accessories that make paper records work, will not be necessary, further reducing costs.

The math on this technology is relatively simple: Less hardware and everything stored remotely on cheaper memory equals decreased costs associated with electronic health records. This will help lower the costs of an all-digital health care system. And it will make the system more accessible for everyone.

Safer and More Permanent Records

We tend to think that digital data is more vulnerable than paper records, but nothing is further from the truth. Yes, data on the cloud is going to be far more accessible (only to yourself with your pass-codes and verification measures) than it ever has before, but that does not mean strangers are going to be able to search your patient files. Just like credit-card data, banking data, and your Amazon purchase history, private health information will be adequately protected and secured by federal standards like encryption technology.

What makes our cloud data so accessible is actually what makes it so much safer than paper: redundancy. [When you write a SOAP note](#) by hand, you get a copy of that SOAP note. When you write a SOAP note within an EHR on the cloud, you get that original note. And then you get a backup, and you will even get a second and third backup on different servers located in different secured nuclear bunker locations. While a single paper SOAP note could easily be lost, or destroyed by fire, theft or other disaster, digital notes are protected and secured on servers around the country, and they would have to be simultaneously destroyed by a nuclear bomb in order for your SOAP note to disappear.

Under the old model, thousands of paper records that help prove the worth of your practice are vulnerable. You are one flood, fire, earthquake, or tornado away from losing all your history as a doctor. On the cloud, your whole practice could be stored in micrometer's worth of space and be backed up to exist forever.

More Accessibility and Transparency

If you read last month's column, you know that cloud computing is an integral part of my vision for chiropractic's future. This vision would not be possible without the redundancy of data I just addressed. Yes, our data will be protected from prying eyes, but we will have the ability to aggregate patient de-identified data to demonstrate our outcomes.

You can choose to share your outcomes to prove the effectiveness of chiropractic care. Outcomes data is going to be more transparent to our patients and the health care community as we move forward beyond the deadline of 2015 for EHR implementation.

Cloud computing will also allow faster sharing of records in a multidisciplinary or interdisciplinary setting. In the paper world, we might fax or mail over a narrative report. In the traditional EHR model, we would electronically fax or e-mail that document. Coming soon, there will be [state-operated health information exchanges](#) that are being developed to allow providers to connect locally with hospitals and the rest of the health care community. It will allow you to obtain information on your patients regarding radiology results, lab results, their medication list, or other health information as long as the patient has authorized you to access that data. In the near future of cloud computing, we might see medical doctors logging in to a health information exchange to see their patient health data and learn that chiropractic care has resulted in a successful outcome for the patient's problems, and in a very cost-effective manner. Technology will be chiropractic's greatest friend in expanding access to new and existing patients.

Less Costly, Safer and Secure, Faster Access

The power of cloud computing is a power that is going to affect our practices. The shift to running our clinic software through powerful remote servers is going to reduce hardware requirements needed to

run clinics. It is also going to make our data storage less costly and more secure, and ultimately more accessible, improving the care we deliver to our patients. Data on the cloud is part of a brighter future of chiropractic practice.

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