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Case Study - MUSC



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MUSC IT Manager

High quality, accurate documentation has long been a cornerstone of both patient care and the business side of modern medicine. And nowhere is this more true than in a hospital setting, where collaboration and information sharing between referring physicians, residents, specialists, hospital staff, the business office, insurance providers and others is an absolute.

Treatment of a single patient often requires passing that person's medical history, insurance card information, referrals, verification documents and other notes on to several parties. Multiply that by thousands of patients and it becomes a huge volume of information going in and out of the hospital on a daily basis.

Because of the requirements for security and privacy in the Health Insurance Portability and Accountability Act (HIPAA), the bulk of this information must be transmitted via fax. According to current law, other document sharing tools (particularly email) are too vulnerable to being intercepted without having a costly and complex secure messaging system in place, thereby putting patient privacy at risk. Faxes are considered more secure since they cannot be pulled out of cyberspace. In addition, doctors are often reluctant to give their personal email addresses to hospitals, insurance companies and others for fear of having their inboxes inundated.

Still, faxes sent via fax machines are not without risk. Misdialing a fax number can cause a patient's records to be sent to a car dealership instead of a consulting physician's office. Inbound paper faxes can be lost, mis-filed, or delivered to the wrong person (e.g. cases where there are two Dr. Browns on staff). Faxes sent several months prior can be difficult to track down if they are not tied to a specific patient or record number, forcing hospital personnel to search through drawer after drawer of files for critical information. The sheer volume of paper required to print all those faxes is also costly, going against mandates both for fiscal and environmental responsibility. And, in a high volume location they can be inefficient since one fax must finish transmitting before the next can come in or go out. As a result, the situation is hardly ideal.



The Customer

In 1834, the Medical College of South Carolina (MUSC) became one of the first medical schools in the United States to establish an infirmary for teaching purposes. In 1955 it opened what grew to become the MUSC Medical Center, an 865-bed hospital in Charleston, South Carolina. The hospital is one of three entities operated by MUSC, with the others being the general academic institution and the medical teaching program. During the 2005-2006 timeframe it admitted more than 31,500 in-patients and registered in excess of 730,000 out-patients.

The Challenge

Describing the number of faxes sent and received by the MUSC Medical Center as “high volume” is like saying a jet engine at full power is “loud.” It doesn’t begin to explain the enormity of the number of faxes being processed each month.

According to Sujit Kar, IT manager for business development and marketing services, the Medical Center receives roughly 50,000 and sends another 10,000 faxed pages each month, with the number of outbound pages scaling up.

“That’s a lot of paperwork to manage,” Kar says. “Just keeping the fax machines loaded with paper and toner was extremely labor-intensive. But the real issue came with getting the faxes from the machines to the right people in the right departments.”

With so much paper coming in, it was easy for all or part of one fax to be attached to another going to a different destination, causing delays until everything was sorted out. It could also potentially create a HIPAA violation, depending on the type of information included in the fax.

There were also HIPAA concerns on the outbound side. Users dialing phone numbers on a fax machine could accidentally transpose numbers or have their fingers slip. If the number they input connected to a fax machine instead of a voice line, there was a risk that confidential patient information could wind up at an auto repair shop, a construction company or another destination.

Even if all went as it was supposed to, the concerns didn’t end once the fax was properly delivered.

“Medical issues tend to have a long shelf life,” Kar says. “Information that was contained in a fax, especially background data such as a copy of the patient’s insurance card, might be needed six months or more later. When that happened it could be extremely time-consuming to track down the right fax within all the paper files spread all over the Medical Center. There was no way to search electronically. You just had to go into the file room, start digging and hope you found it quickly.”

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Sujit Kar
MUSC IT Manager



In the face of the double-edged sword of increased volume and increased scrutiny of its practices due to HIPAA, Kar and his team knew they needed to change the way faxes were being handled. What they needed was something simple, flexible and reliable, yet capable of handling the daily load. As is often the case these days, a little Internet research provided the answer.

The Solution

In the beginning, Kar looked into both fax servers and Internet fax services. He quickly eliminated the former.

“Because of the volume we have we didn’t want to get into managing fax servers,” he says. “That can be a nightmare. We wanted an outsourced solution, where we could get some help with development, and once it was running all of the technical management would be handled for us.”

That left Internet fax services – online applications that allow users to send and receive faxes via email accounts or a secure online server. After reviewing and talking to several of the leading Internet fax service providers, Kar selected MyFax.

“We performed a full cost analysis and MyFax was shown to be the most cost-effective,” he says. “What we came to discover after piloting the program was it was a great choice on many levels. In particular, MyFax’s development and customer support is simply outstanding. There was no way this was going to be an off-the-shelf solution for us. Their developers were extremely helpful and easy to work with, not only making modifications as we asked for them but also providing guidance and suggestions to us. We received a lot more support than we were expecting.”

Because of the size of the project and the pressing need for searchability, MUSC Medical Center decided to start with inbound faxes. The MyFax solution went live after six months of planning and development time, and has been serving its 700 users successfully for three years. The outbound fax service was launched at the end of 2007, where it currently serves approximately 3,500 users.

“It has really been trouble-free,” Kar says. “We had a rare situation where our Internet lines were cut by a road repair crew, but other than that it runs flawlessly.”

The mechanics of the new MyFax service are simple. MyFax activates a fax number for MUSC Medical Center and forwards that information to an administrator. The administrator then assigns the number to a fax queue which is tied to a particular person, area or department. MUSC Medical Center currently has 40 fax numbers feeding 76 fax queues; its old fax numbers are forwarded to the new MyFax numbers, eliminating the need for people outside the Medical Center to change their old habits.

When faxes come in they are tagged with medical record numbers. If required, critical patient information is pulled in from the medical records system. The faxes are then routed automatically to the right department by software that scans the cover sheets and determines where they should go, regardless of the fax number it was sent to originally. This capability not only helps improve efficiency; it also helps reduce potential HIPAA violations.

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Once a fax gets into the queue it is monitored on a regular basis, and the appropriate action (such as attaching it to a patient’s chart) is taken. When they are finished with it the fax is marked complete, taken out of the queue, and stored electronically.

Assigning medical record numbers also helps MUSC Medical Center locate faxes weeks, months or even years later. Because they are electronic files, they can be searched by number, patient last name or other criteria, taking a process that used to require hours or even days down to one minute or less.

The move to MyFax has had a big impact on outbound faxes as well – particularly in helping reduce potential HIPAA violations according to Kar.

“Making sure we had the right fax numbers for all the physicians we work with was a huge issue in the past,” he says. “Physicians move their offices and/or change their fax numbers for other reasons all the time. People also can mis-dial a number from time to time. We now have a central database called Doctor Manage that we use to keep numbers up to date. It’s tied into MyFax in a way that lets users type in the first few letters of the doctor’s last name, or the first few digits of the phone number, and then the right fax number fills in automatically. We have two full-time resources whose job it is to maintain that white list of physician information. There’s also a tool that lets users send me a notice that a number needs to be updated. Our users love it.”

Sending a fax via MyFax is easy, says Kar. There is now an icon on the toolbar that connects to MyFax as though it was another printer. Users can send a fax directly from any application, without having to open up any additional windows – or get up and walk over to a fax machine.

The Results

Since making the move to MyFax, Kar reports that potential HIPAA violations have been reduced significantly.

“Anytime humans are involved there is the potential for a violation,” he says. “But MyFax has helped us reduce that number as much as I believe is realistic. And when an issue does come up we know about it immediately so we can trace it right away and take steps to rectify the situation.”

MyFax has helped MUSC Medical Center meet another area of responsibility – environmental concerns.

“We’ve reduced paper consumption by a total of almost 60,000 sheets per month,” Kar says. “That’s nearly three quarters of a million sheets of paper per year. We’re saving the energy needed to power all those separate fax machines, too. Hospitals are always under scrutiny to be environmentally responsible. MyFax helps us meet that responsibility while also helping us keep our costs down. Everybody wins.”



While he doesn't have hard numbers for the labor savings, Kar believes MyFax has made a significant impact there as well. Between the search function, the ability to fax directly out of an application, and the ties to other systems such as Doctor Manage, MyFax has simplified the entire process of sending and receiving faxes. It's something the users have noticed.

"Anyone who uses MyFax is hooked on it," Kar says. "And the support we've received from the company has been beyond excellent. I wish all enterprise-level tools worked this smoothly and were supported this well."

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About MyFax

MyFax is the fastest growing Internet fax service used by individuals, small, medium, and large businesses to send and receive faxes using existing email accounts or the web. MyFax offers services in North America and Europe, including the United Kingdom, to industries recognized among the fastest growing adopters of internet fax including finance, insurance, real estate, healthcare, transportation and government. More than 20,000 new customers subscribe to MyFax each month. Additional information is available at www.myfax.com and www.myfax.uk.com.

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