Web-based System Improves Access

by Jill Burrington-Brown, MS, RHIA

Does the idea of the paper medical record dying a natural death due to irrelevancy sound intriguing? This is the future of the paper medical record, according to Bruce Elkington, chief information officer of Overlake Hospital Medical Center in Bellevue, WA. The strategy at Overlake has been to build electronic access to patient information over time, eliminating the need for paper.

The use of Web technology, while less costly than many of the hospital systems available, requires innovative thinking, creativity, and visionary leadership. A healthcare facility can start slowly by developing secure remote access and moving from there with the help of a strong facility leader, according to Elkington and Bill Crounse, MD, vice president of Medical Technology at the Overlake Venture Center. Both Crounse and Elkington credit Ken Graham, RHIA, president and CEO of Overlake Hospital Medical Center, with being that kind of leader.

Getting Started

The journey began in July 1998 when Overlake received the first installment of what has become a $600,000 grant to computerize the patient record. Overlake Hospital wanted to stay with its computer vendor, and that led them to develop in-house, Web-based access.

Elkington states that in order to move on this type of directive, the facility had to have its infrastructure in place. At Overlake, that means that all PCs are leased and turned over every few years to keep the equipment compatible with the latest technology. This also helps keep them standardized within the organization. Software is also standardized. For example, Overlake uses one main program, and other office automation software systems are not allowed.

The key to the reinvention was making health information accessible via the Web in combination with running a wireless network within the facility. This technology has allowed Overlake to do everything from remote admitting to downloading of patient lab results to a physician's hand held computer to the monitoring of fetal monitor strips from an obstetrician's office.

How Wireless Works

The wireless network also permits bedside admitting. This is particularly useful in the emergency department, so the family can stay with the patient instead of having to be separated while giving admitting information to employees. The admitting counselors come to the patient and use a wireless notebook computer to enter the pertinent information. This is also the process used in the maternity center. The patient is encouraged to fill out the pre-admission form on the Medical Center Web site, and at admission, the admitting counselor comes to the bedside and completes the admitting process.

Additionally, the wireless network enables the physician to access the latest test results and then use a PC to give orders for care. Elkington considers this a big step toward improving efficiency and productivity for the providers of care. He also stated that this system meets one of the patient safety measures of The Leapfrog Group, a national group dedicated to improving healthcare quality.

Ongoing monitoring is also available online to physicians. Fetal monitoring, a routine procedure during labor, can be observed by the obstetrician in his or her office while the patient is in labor. All the physician needs is Web access. For example, a physician can keep the fetal monitoring on her computer in her private office while her patient is in labor. When there are questionable portions of the strip, the physician can determine from her office whether the patient needs intervention. Not only does this save the physician time in traveling to the bedside, but it is also more responsive to the patient. Coming soon to Overlake are results of non-invasive cardiac monitoring, which will have the same benefits for both patient and physician.

Securing the System

Security of the system is accomplished in an unusual way. Each medical staff member with access has a user ID, a password, and an electronic key fob that displays a new six-digit code every 90 seconds. The random numbers generated by each fob are unique for every user. When users sign on to the network, they use the six-digit code currently displayed on the fob. This prevents a non-user from accessing information by using someone's ID and password because the non-user also has to have access to the changing code on the key fob. The key fob will operate for five years without a battery change.

According to Crounse, Overlake has a new partnership with Microsoft to develop an online tool called "Dr. Goodwell." The tool would allow patients to see their own physicians' online schedules and choose their own virtual visit appointments. The Web site offers health information, secure physician-to-patient Web messaging, and virtual visits with doctors. This is accomplished by using software that allows visual and audio conferences between patient and physician.

Crounse is quick to say the Web site does not replace seeing a physician, but it is a way to reduce both the time and costs associated with in-person visits. Dr. Goodwell is being tested in a pilot project with 100 Microsoft employees with the hope of expanding it to 1,000 employees and to other large, self-insured corporations.

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