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Cutting the Cord
Canadian Hospitals Go Hands Free

INSIDE

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CANADIAN HOSPITALS ARE GOING HANDS FREE

A wireless-communications device—dubbed the 'Trekkie badge'—is appearing on the lapels and lanyards of hospital workers.

By Gary Folker

With the mounting need for healthcare services and ever-more-thinly stretched resources, it's easy to imagine the number of times in a single day many hospital workers wish they could be in two places at once. A clip-on wireless communications badge just might be the next-best thing.

It weighs about 60 grams—less than two ounces—and can be worn on a scrub, a lapel or a lanyard. It enables instant, hands-free, two-way communication anywhere within a networked facility. Adopted by almost 500 hospitals in the U.S., it's now being embraced by practitioners on this side of the border.

The technology was developed by California-based Vocera Communications and is now being integrated into Canadian hospitals by firms such as xwave. One of the country's largest providers of healthcare information technology, xwave was the first Canadian-based company to offer the badges in Canada, and is now helping to manage its installation in facilities like Sunnybrook Health Sciences Centre in Toronto. There are 270 users of the badge at Sunnybrook, all located in its Department of Medical Imaging.

"The Vocera badge has enabled the staff to locate each other more easily," said Pam Hughes, Project Leader, Medical Imaging, Sunnybrook Health Sciences Centre, "saving time and increasing our ability to deliver patient care."

"Integrating the system at Sunnybrook involved certifying and upgrading its wireless network and purchasing a new server, a process that took about two months," explains Andrew Hickey, an Implementation Specialist with xwave Healthcare. Hickey says most hospital networks require some degree of enhancement in order to support the Vocera solution. Having helped train the users at Sunnybrook, he adds, "the response to the technology has been tremendous."

"The badge is very easy to use; I often attend meetings and conduct ad-hoc demonstrations of it with first time users," claims Myles Leicester, Team Leader, Technical Services, Sunnybrook Health Sciences Centre.

The clip-on badge comprises one component of the Vocera Communications System; the other component is the system software. Together they operate using voice-over-IP (VoIP) and speech-recognition technology, and a standard 802.11b/g wireless fidelity (Wi-Fi) network; the same kind that supports cell-phone use. The badge has a button on the front, a small speaker below it and a display for text messaging and alerts on the back. Inside are a digital-signal processor chip and a Wi-Fi radio (similar to that used in laptop wireless cards).

To make a call, a user presses the button on the badge and says the name of whomever it is the caller needs to contact (for instance: "Call Doctor Smith"). The caller is identified to the person receiving the call and that person is asked by the badge whether he or she wants to accept the call (an optional security feature, voice print verification, helps prevent fraudulent use). A 'yes' by the recipient engages the call; pressing the button by either party ends it.

Pages can also be broadcast, both on a one-to-one and one-to-many basis—according to user-group, for example. When equipped with telephony integration, the badge allows users to call directly to a phone extension as well as make calls to and receive them from external sources. The badge can also interact with third-party platforms such as call-boxes and nurse-call systems.

Every user of the badge has a unique profile; this allows a single badge to be used by many people. Users log on to the badge when they begin a shift and log off again when they finish. The profile stores the user's name, title, group name, and contact information. Also programmed into the profile are call-flow options that determine how calls are addressed or escalated if someone isn't available. All of this profile information is contained within a server database powered by the system software.

"Staff use the badge to inform the radiologists when they are ready for a procedure. Instead of calling and getting busy signals

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or having to walk to an office, we call to inform the doctor the patient is ready for a procedure. That saves time and allows for better patient care," says Pam Hughes.

While advocates of this technology are predicting it will eventually become the norm in hospitals everywhere, there are analysts who have argued that the interruption and distraction caused by such a device can be detrimental to concentration and overall productivity. Still others question the value of adopting communication that apparently does what a cell phone can do—many healthcare workers today carry either a cell phone or pager or both.

There are aspects of hospital work, however, where the pros of intuitive, hands-free communication clearly outweigh the cons and outdistance the capabilities of other devices. For example, 2006 figures cited by the Ontario Nurses' Association show that 36 percent of nurses have suffered physical abuse on the job. In such circumstances, hands are not always free to dial a phone or even ring a bell or push a button.

User-safety aside, there isn't a substitute for being able to instantly establish two-way communication with another person, especially in a healthcare environment. Time is genuinely a critical factor when caring for human life, and the minutes wasted trying to locate an individual or get help in making a decision can have serious ramifications.

"The device can be used by the resident on call to contact a staff radiologist at home," states Pam Hughes. "One resident said there would be at least an hour time savings each night on call, as they are no longer tied to a phone. This is a huge time savings for them to be able to communicate with others and yet move within the department as needed."

Paging is another area where the badge offers considerable advantages. Pages are silent, whether broadcast to an individual or an entire group. And it isn't necessary for the sender to get to a particular device or desk to transmit the page. Nor is there the need to wait for a response: communication is immediate.

As well, from an asset-management perspective, the fact that the badges clip on (versus pagers, cell phones and personal digital assistants that must be held) helps prevent them from being dropped and broken, or misplaced. The fact, too, that the badges function only in a networked facility prevents people from taking them outside the hospital for external or personal use.

"The benefit of the Vocera badge versus other portable devices is its level of portability," claims Myles Leicester, Team Leader, Technical Services. "The badge is lightweight even with its extended life battery and users don't feel tied down with heavy equipment. In addition, the user on the receiving end of a call can be completely hands-free when answering a call. No other device can offer this level of ease. Even without the badge the Vocera database is the real powerhouse. The speech recognition is very good and the ability to summon users by name or their workgroup is a huge benefit."

Toronto's Sunnybrook is one of several Canadian healthcare facilities that have adopted the Vocera Communications System. Others include the British Columbia Interior Health Authority, the Alberta Children's Hospital in Calgary. In Ontario: St. Thomas Elgin General Hospital in St. Thomas, the Chatham-Kent Health Alliance, Soldiers' Memorial Hospital in Orillia, and Kingston General Hospital in Kingston have all adopted the system.

"We're also seeing considerable interest in the solution by hospitals in Atlantic Canada," says xwave Healthcare specialist Heather Crawford."The badge's size and two-way functionality make it unique in the healthcare sector, and its user-friendliness makes it easy for practitioners to adopt."

In addition to healthcare, the technology is marketed to sectors such as retail, libraries, and hospitality—anywhere mobile 'corridor warriors' need immediate access to vital resources and information.

Healthcare is traditionally slower than other sectors on technology uptake, partly because of the human dynamics of health and because of the simple fact that budgets are tight. All of which makes the enthusiastic response by hospitals to the Vocera badge doubly impressive.

"The real strength of the badge is in its size," says Andrew Hickey. "It's very satisfying to complete one-hour training sessions in which people are genuinely intrigued by the technology—and then walk out using it." ■

Gary Folker is Managing Director, Business Development, of xwave Healthcare. He has 30 years of experience pioneering healthcare technology in Canada and has been instrumental in the deployment of a wide range of innovative healthcare systems and services across North America. He holds a Bachelor of Science in Mathematics from Acadia University.