

IBM Vocera - Delivering peak efficiencies and improved patient care at Kingston General Hospital



Overview:

The Challenge

Address manifested nursing shortage while delivering improved patient care and safety

The Solution

An IBM implemented Vocera Mobile (wireless) Communications system to serve 1,400-1,800 hospital staff

The Benefit

Significant reductions of time spent on communication, patient care coordination and other support activities leaving more time for direct patient care

When life and death decisions are being made in a hospital, seconds count. Assembling the right caregiver team in the shortest possible time, for instance, may be critical to a patient's survival. In addition, finding ways to increase the overall effectiveness of nurses and other clinical staff so more time is spent in direct patient care is also paramount to any hospital's continued success.

That is why, after careful study, Kingston General Hospital in Kingston, Ontario, chose an IBM Vocera Communications System to create a 24-7, hospital voice network. There are now more than 800 Kingston General healthcare workers in direct communication with each other at the touch of a button using Vocera, and up to another 1,000 scheduled to join them over time. Hands-free operation coupled with state-of-the-art voice recognition technology means no dialing or typing; simply push a button on the Vocera "badge" for instant communication. Nurses can call each other for help or advice, contact the pharmacy for a missing pill, and even receive assurances that their children have arrived home safe from school – all without missing a step.

"We receive and treat more than 500,000 inpatients from Southeastern Ontario and beyond annually at Kingston General," says Ann Gay, Consultant of Workload and Systems at Kingston General Hospital.

Kingston General, a teaching and research hospital affiliated with Queen's University, has more than 3,500 staff and annually receives more than 100,000 ambulatory clinic visits, accepts more than 46,000 emergency cases, admits almost 17,000 patients and performs more than 7,000 surgeries. The academic health sciences centre also provides hands-on skills training for 1,900 health care students annually. Two years ago, however, the work environment at Kingston General changed drastically.

Impact of nursing shortage leads to patient access issues

In late 2006, the hospital found itself facing an acute nursing shortage that forced it to close beds. While nurses were retiring or leaving their vocation, the population they served was also aging and needing more specialized care. In addition, the year brought a need for enhanced isolation initiatives due to the appearance of new "super bugs" such as Vancomycin-Resistant Enterococci (VRE) and Methicillin-Resistant Staphylococcus (MRSA) – both forms of bacteria highly resistant to known antibiotics.

"Nurses had to scrub up to enter the isolation areas and then, if they needed equipment, drugs or other supplies, they had to leave isolation, and then scrub back in before

returning," says Gay. "Our caregiver staff was using up more and more of its time in activities that were necessary but peripheral to delivering patient care."

Like many hospitals, Kingston General was also faced with providing more service with fewer resources. "A team was asked to find ways to mitigate the erosion of our core services delivery including the loss of nurses by increasing retention and improving effectiveness and job satisfaction," says Gay. "We knew Vocera could fill a real need but to implement the system, we had to prove it. We undertook a study to determine its value, using time, motion, and attitude measurement tools."

On completion it revealed that nurses spent an inordinate amount of time responding to telephone calls and looking for other team members or equipment. It also showed that the nursing work environment would be radically improved if they could more easily and effectively communicate amongst themselves and with other colleagues.

IBM Vocera pilot project yields impressive results

"IBM implemented the Vocera Communications System in May 2007 as a pilot project and, after using it for some months, acceptance of Vocera exceeded all expectations," says Gay. "Only about 57 percent of users thought it would save them time when we began, versus 97 percent when the trial was over. Initial belief that badge communication would be disruptive disappeared, and nurses were extremely reluctant to give them up at the end of the pilot."

In fact, drilling down into the data showed that Vocera-generated time savings were significant:

- Time spent looking for others was reduced by 45 percent
- Time responding to phone calls was reduced by 61 percent
- Time spent looking for assistance was reduced by 54 percent
- Trips to the telephone were reduced by 6.8 to 2.9 events per nurse per eight-hour shift

Overall, time spent on key communications activities was reduced by 25 percent per eight-hour shift. And though the study wasn't directed to measure distance traveled by staff, pedometers showed that most reduced their travel to some degree when wearing the Vocera badge, says Gay.

"Nursing efficiencies were enhanced, direct care time climbed and responsiveness was improved," she says. "We believe patient safety was also improved and hospital staff safety enhanced since they were able to summon help at the touch of a button."

IBM and Kingston General Hospital – a perfect partnership

According to Gay, IBM worked with the Kingston General Hospital Vocera team to implement the system and conduct tests to ensure smooth operation. IBM staff trained most end-users and provided skills transfer for the hospital's system administrators and helpdesk staff. "Our experience with IBM was a clear example of a mutually beneficial partnership with private industry resulting in a tangible, measurable and significant benefit to our hospital," she says. "IBM was there for us every step of the way."

Still, Vocera voice communication is just the beginning. "We are looking forward to initiatives such as integrating nurse call and oximetry with Vocera, and developing an asset-tracking system so nurses can quickly find equipment as well as people."

Gay says caregivers responded to the Vocera Pilot project with overwhelming support. Many frontline staff said it was the most interesting, flexible and useful tool they had been given in years. They also resisted returning to the old methods of communicating following the pilot.

The result? Vocera is a "must have" communications tool being effectively used by 800 caregivers at Kingston General Hospital with plans in place to eventually roll it out to a total of between 1,400 – 1,800 others. Gay says she expects most hospital staff now using in-house mobile phones will trade them in for the ease of use, options and robustness of the IBM Vocera Communications System.

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