Hospital Deploys Wireless Solution to Enhance Patient Bedside Care

Joseph Brant Memorial Hospital and UNIS LUMIN built out a Cisco® wireless network to cover entire hospital

**Business Challenge**

Joseph Brant Memorial Hospital (JBMH) is a mid-sized hospital, situated west of Toronto and serving the growing community of Burlington. The hospital first opened in 1961 as a 228-bed healthcare facility and was expanded to 420 beds a decade later. Following major restructuring in the 1990s, the hospital reduced the number of inpatient beds and expanded the ambulatory care and day surgery departments. At present, the hospital has 265 inpatient beds and annually records 13,800 admissions, 46,000 visits to the emergency department and 1500 births.

As a full-service, community-oriented hospital, the importance of bedside patient care is paramount to the hospital’s level of service. With the advent of new healthcare applications that allow hospital staff to spend more time with patients and families and less time entering data into computers, the reality of meeting this demand has become easier. These applications are best run on mobile computing devices that give healthcare workers freedom from their desks and allow them to work at the bedside. In the case of Joseph Brant, the hospital had a dietary application that it had wanted to implement for its dietitians to use at the bedside, but the hospital had no wireless infrastructure.

Because the building is structurally dated, when IT staff at the hospital decided to implement a structured wiring solution throughout the facility, cost and complexity prevented the team from installing network drops in the hospital’s patient rooms. “That was a decision we made because of the age of the building and the limitations presented by older construction materials,” says Denis Burella, director of IT and communications services at JBMH. “Concrete and plaster walls are not flexible. We needed to come up with a different solution to provide patient access in our rooms.”

On top of the physical limitations of the hospital’s bricks and mortar, Burella says the IT department had inquiries from pharmacists, dietitians, nursing staff, and physicians about applications that would allow them to spend more time with the patients. “We’ve had pressing needs to have our clinicians at the bedside,” he says. In the case of JBMH’s
dietitians, they have to be at the bedside to provide the patients with an accurate dietary plan.

Before the application was implemented, everything was pen and paper. The dietitians would manually review patient charts, sit down and conduct nutritional assessments, review the dietary options with the patient, manually calculate nutritional requirements and go back to the computer station to input the information. “That took time, and it wasn’t efficient. Less time is committed to hand customizing therapeutic diets, eliminating a lot of the manual work, there is less room for error and more time is available to meet with the patients themselves,” says Burella.

With the dietary software program up next on the IT department’s list, it was a natural fit to implement a wireless solution throughout the entire hospital in order to meet the needs of the hospital’s staff. “We tied two projects together in order to achieve connectivity throughout the entire building,” says Burella. “This is the first facility in Canada to use the wireless infrastructure for our particular Windows-based dietary software.”

**Network Solution**

As a long-time Cisco customer, Burella says it made sense to select a Cisco solution to complement the implementation of the dietary application. JBMH chose to work with Cisco Gold partner UNIS LUMIN, which has served as a trusted advisor on the hospital’s IT communications and networking, and has managed its networks for nearly a decade. UNIS LUMIN works with companies in both private and public sectors, including clients in the healthcare industry like JBMH, to provide them with technology solutions and services that provide business value.

David Butt, account manager at UNIS LUMIN, says Joseph Brant is faced with many of the same challenges as other Ontario hospitals, including lack of available funding on a consistent basis. With that in mind, Butt says Burella is always looking for opportunities with partners like UNIS LUMIN to find new and better ways of delivering healthcare to the community. “Joseph Brant has a solid IT vision – intelligently building out its infrastructure, keeping it current and leveraging it for the benefit of staff and patients,” says Butt. “They’re ahead of the pack.”

Before rolling out the wireless infrastructure, Joseph Brant and UNIS LUMIN conducted an in-depth on-site assessment of the facility to determine requirements and priorities for a wireless infrastructure. Because JBMH’s existing network infrastructure uses Cisco equipment, the project was a very easy integration.

Joseph Brant installed a total of 131 Access Points (APs) at its site, including 109 Cisco Aironet® 1000 Series and 22 Cisco Aironet 1232 Series. The APs were installed on all seven floors of the hospital, giving it complete penetration throughout the entire campus. Joseph Brant is currently planning to install further APs at the adjacent long-term facility to provide wireless access for users.

To secure the network, Joseph Brant is using a Access Control Server (ACS) and a Wireless Control System (WCS) to manage the wireless LAN. Security is a critical concern in the healthcare environment because of legislation protecting patient information and the sensitive nature of patient information. "The security of the wireless network was at the top of our list of things we needed," says Jeff Dawson, technical support supervisor at JBMH. "That's one of the reasons we partnered with UNIS LUMIN - we know we can rely on their security expertise."

Although all of the clinical laptops, such as those used by the dietitians don’t leave the hospital, nonclinical laptops, including those brought in from outside the hospital by physicians, must verify that their machine has the proper antivirus software and security
credentials before they log-on to the network. A separate public portion of the network is available to visitors for a service charge.

“The wireless infrastructure has pretty much laid the foundation for us to move forward. It’s one of the most important pieces for us, because there are other technologies that we can’t implement without it.”

— Denis Burella, Director of IT and communications services, Joseph Brant Memorial Hospital

Business Results
The wireless network is used by 16 nutrition and food service staff to access the dietary software and current ADT system, via 9 tablets. The feedback on efficiency, time-savings, and patient satisfaction has been unanimously positive. "In healthcare, ROI doesn’t return dollars; it improves patient safety and satisfaction," says Burella, "and our wireless infrastructure will certainly pay benefits in that regard." Future applications for addition to the wireless network include uploading nutrition information from the dietary software program directly into the EMR. Other projects such as patient documentation, for example, will help save valuable time, allowing nursing staff to provide better service to the patient, adds Burella.

The wireless service is also available at no charge to the facility’s physicians and to the public for a small fee. This has benefited patient visitors by allowing them to stay in touch with their home or office by being able to access virtual private networks and to stay in touch with family members who are not able to visit patients in the hospital due to distance. In one case, the Burlington Post wrote about how a mother of a patient was able to use a Web cam and MSN to communicate with the child’s father who was in New York City.

Next Steps
The implementation of a wireless network throughout Joseph Brant’s campus has opened up the possibility for other applications that will further benefit patient bedside care. “The wireless infrastructure has pretty much laid the foundation for us to move forward,” says Burella. "It’s one of the most important pieces for us, because there are other technologies that we can’t implement without it.”

Joseph Brant is currently looking at providing its pharmacists with portable devices so they can provide the same level of service at the bedside as the dietitians. The hospital is also in the beginning stages of implementing an emergency department management system that will comprise a wireless portion for triaging and quick patient assessments. This will help expedite the flow of patients in Joseph Brant’s emergency department, says Burella.

But the biggest project to come out of this implementation will be the rollout of a patient documentation system that will be at the bedside of every patient throughout the hospital. Burella says this will put the wireless network to the test, because it will encompass 25 nursing stations. "As we move forward on our IT vision, we realize more and more things that we can leverage from a wireless point-of-view. That points to a smart investment on our part and better things to come for our staff, patients and families. With ongoing assistance from UNIS LUMIN, we intend to leverage our Cisco infrastructure for a long time to come.”
FOR MORE INFORMATION
To find out more about Cisco Unified Communications, go to:
For ongoing news, please go to http://newsroom.cisco.com/canada/
For more customer success stories visit http://www.unislumin.com