

## Rural Community Hospital Deploys State-of-the-Art Technologies to Increase Patient Care

Winchester District Memorial Hospital forges the way for next generation patient care during clinical improvements using Cisco integrated healthcare solutions.

EXECUTIVE SUMMARY
<p><b>WINCHESTER DISTRICT MEMORIAL HOSPITAL</b></p> <ul style="list-style-type: none"> <li>• Healthcare</li> <li>• Winchester, Ontario, Canada</li> <li>• 275 staff including 79 appointed physicians, dentists and midwives; 160 dedicated volunteers in all areas of operation</li> </ul>
<p><b>BUSINESS CHALLENGE</b></p> <ul style="list-style-type: none"> <li>• Deploy robust, reliable network despite hospital budget and limited IT resources</li> <li>• Build an IT infrastructure that hosts the next wave of healthcare technologies and expand network capabilities to support paperless and filmless system</li> </ul>
<p><b>NETWORK SOLUTION</b></p> <ul style="list-style-type: none"> <li>• Upgrade existing communications platform to include wireless IP phones and unified communication solutions</li> <li>• Integrate all technologies onto single IP network during facility renovation</li> <li>• Implement a redundant backbone and self-monitoring systems</li> </ul>
<p><b>BUSINESS RESULTS</b></p> <ul style="list-style-type: none"> <li>• Improved internal communication capabilities to improve overall patient care and healthcare delivery</li> <li>• Reduced operating costs by implementing converged infrastructure that required no additional IT support staff</li> </ul>

### Business Challenge

Located in Ontario, Canada, the Winchester District Memorial Hospital (WDMH) opened its doors in 1948 with a mission to provide quality patient care, establish a collaborative working environment for teams to grow and exceed expectations, respect the privacy rights of all persons, and promote informed participation in decisions related to care, quality of life and optimal level of wellness.

WDMH is a busy community teaching hospital that focuses on acute, ambulatory, and complex continuing care. Its network with other hospitals in the region provides residents with greater accessibility to medical expertise and clinical services that typically would not be available in a small rural community hospital.

This expertise and level of services are a recent addition to the community. In 2001 the hospital realized that it needed to upgrade its current IT infrastructure to meet the needs of its growing community for

the next 30 years. Hospital executives developed an Information, Communication and Technology (ICT) strategic plan to expand on the existing IT infrastructure, essentially building a brand new hospital. The renovation price proved to be costly, but with the support of its community the hospital raised funds towards the \$63 million goal. In February 2009, Winchester District Memorial Hospital once again opened its doors, but this time to a new facility designed with the proper IT environment.

“We were not building offsite, in fact we were building on our existing environment, and I was given the opportunity to build an IT infrastructure that would host the next wave of healthcare technologies,” said Sean O’Brien, chief technology officer for Winchester District Memorial Hospital.



Trudy Reid, the hospital's CEO, said the communities served by this district hospital have a long history of being prepared to put their money on the table to ensure they have the kind of hospital capable of meeting their healthcare needs.

WDMH was no different than other rural hospitals in Canada when the renovation project first started. There was not a lot of technology in place to support the ICT plan, nor was there business continuity. The communications infrastructure was disparate and challenging to manage. In addition, there was little to no understanding of what it meant or what it would cost to install the proper IT infrastructure to support digital imaging and electronic medical records.

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**—Sean O'Brien, Chief Technology Officer, Winchester District Memorial Hospital**

### Network Solution

WDMH wanted to create an environment both high-tech and high-touch, and since it was set to be developed from the ground up, the organization was able to build its technology platform from scratch without sacrificing its intimate culture.

“If we had multi-million dollar investments in technology, it would've been a much more difficult task,” Reid said. “We did not have significant investments in equipment and technology, so we looked at the best.”

Winchester District Memorial Hospital's technology infrastructure was built on improving and supporting patient care while producing helpful information for professionals making clinical evaluations. Whatever technology the hospital purchased had to also support decision-making in an integrated paperless and filmless clinical and corporate system.

“It was also important that the technology be integrated within our overall clinical information system and was able to be uploaded to consultants and physicians living many kilometers away,” Reid continued. As a small hospital in a rural area, WDMH does not have specialists available 24 hours, seven days a week. But to be successful in the healthcare arena of today and tomorrow, she said “it's important to be able to access specialist expertise at all times.”

WDMH deployed the latest unified communication technologies anchored by Cisco Unified Communications Manager and Unity Connection 7.0. Winchester was the first hospital in the world to integrate with Rauland Borg Responder<sup>®</sup> 5 Nurse Call, a complete and easy-to-use communication system that allows nurses the ability to receive vital communications and clinical information on Cisco wireless IP phones, improving efficiency for patient care delivery.

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WDMH converged its backbone infrastructure, including facility automation and security access systems, to an IP-based network to reduce additional operating costs and maintenance fees. In doing so, WDMH did not have to hire additional staff to manage the network environment, but rather provided its own in-house staff with the tools they needed to expand their skill sets.

“Now the maintenance and management of our network is cost-effective because we are leveraging a common infrastructure under one data center. We can develop workflows across a spectrum of technologies using the same protocols, as opposed to using manual intervention. We have a fully-meshed network, whereas before we had a number of separate systems that were hard to maintain,” said O’Brien.

## Business Results

Winchester District Memorial Hospital achieved every goal listed in its ICT strategic plan to develop its new facility. With the right IT infrastructure in place, content experts – nurses, physicians, and care providers – are able to reengineer or determine the hospital workflow. Their knowledge and understanding of the hospital’s intricacies, from the Emergency Room to the Operating Room to the Enhanced Care Unit, allows them to decide how to effectively use the new technology to provide better patient care.

PRODUCT LIST
<b>Routing and Switching</b> <ul style="list-style-type: none"> <li>• Cisco 6500 Series Switches</li> <li>• Cisco 3750 Series Switches</li> <li>• Cisco Data Center MDS Switches</li> </ul>
<b>Unified Communication s</b> <ul style="list-style-type: none"> <li>• Cisco Unified Communications</li> <li>• Cisco Unified Communications Manager 7.0</li> <li>• Cisco Unity Connection 7.0</li> <li>• Cisco Unified Wireless IP Phones 7925G</li> <li>• Cisco Unified Application Environment</li> <li>• Cisco Unified Video Advantage</li> </ul>
<b>Wireless</b> <ul style="list-style-type: none"> <li>• Cisco Wireless Networking with Management</li> <li>• Cisco Location Based Services</li> <li>• Cisco Mobility Service Engine</li> </ul>

“By using Cisco technologies we are able to streamline staff procedures to develop an integrated workflow that leverages the fact that all systems are talking on the same network infrastructure,” O’Brien said.

In addition, WDMH was able to increase its overall communication capabilities between hospital staff over a converged wireless infrastructure without increasing its IT support staff. By implementing a redundant backbone and self-monitoring systems, WDMH only needs two IT support employees to proactively maintain the environment through one centralized help-desk.

“Why would a rural hospital’s IT infrastructure be any different than the large academic teaching centers when you are talking about managing the same type of clinical information systems, healthcare systems and patients? We want to demonstrate to other rural community hospitals on what they need to do so they understand how to converge everything into one IT infrastructure, leverage that network, and make it affordable by sharing best-practices and baselines of technology that have proven to be successful,” said O’Brien.



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