

## Network Allows Physicians to Reach Isolated Populations

Ontario Telemedicine Network provides expert care for patients in remote locales.

| EXECUTIVE SUMMARY  |
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| <p><b>ONTARIO TELEMEDICINE NETWORK</b></p> <ul style="list-style-type: none"> <li>• Government-funded Healthcare Delivery</li> <li>• Ontario, Canada</li> <li>• 110 Employees</li> <li>• 1500 Participating Health Care Professionals</li> </ul>   |
| <p><b>BUSINESS CHALLENGE</b></p> <ul style="list-style-type: none"> <li>• Facilitate cost-effective, time-sensitive delivery of expert healthcare to citizens in remote locations</li> <li>• Support delivery of complex medical care that is exacerbated by sparsely populated large area lacking access to modern facilities/specialists</li> </ul>  |
| <p><b>CISCO SOLUTION</b></p> <ul style="list-style-type: none"> <li>• Employ Cisco's Multiprotocol Label Switching (MPLS) Network, Cisco Unified Communications with Survival Remote Site Technology (SRST), Cisco Collaborative Care, and Unified Contact Center Express to bring remote specialist care without travel</li> <li>• Reliable high-bandwidth videoconferencing stations transfer audio, video, and data to allow for remote evaluations and diagnoses</li> <li>• Backbone is Cisco Medical-Grade Network</li> </ul> |
| <p><b>BUSINESS RESULTS</b></p> <ul style="list-style-type: none"> <li>• Provincial medical-related travel costs reduced Canadian \$8 million annually</li> <li>• Network hosts more than 32,000 clinical consultations each year safety and patient flow</li> </ul>  |

### Business Challenge

The province of Ontario in Canada has a population of approximately 12 million, most of it concentrated in the large cities of Toronto, Ottawa, and London near the U.S. border. Ontario's northern sector, on the other hand, is often referred to as a province within a province. The area is roughly the size of Texas and California combined, yet it is home to fewer than 1.5 million residents. In such a sparsely populated land, healthcare providers constantly battle shortages of health professionals, distance barriers, isolation, escalating health care costs, and the demands of serving the diverse needs of distinct populations.

Of course, serving an isolated population is a challenge for medical professionals. It is impractical for every specialty to represent itself in such a region, yet medical challenges in which time is a critical factor arise regularly.

"Thousands of people every year, spread out over a great distance, need access to medical care," says Dr. Ed Brown, President and Chief Executive Officer of the Ontario Telemedicine Network (OTN). Brown noted that oncology, neurology, internal medicine

and mental health care are among the specialties most often requested for patient referral.

Three telemedicine networks had existed in Ontario since 1998, providing remote patient consultations with a specialist via video teleconferencing. While each successful in their own right, the three networks were not a complete solution due to compatibility problems between them that sometimes delayed care or required users to switch locations. The province needed a stable, secure, compatible solution that would serve both the isolated residents and the medical community. OTN, the result of a merger of the three Networks in 2006, filled that void. It uses videoconferencing and advanced information communication technologies to deliver clinical, educational and administrative services to more than 395 health care sites province-wide. It engages providers and institutions to provide the service, manages the technologies, fosters innovation through collaboration with its members and delivers telemedicine training.

Medical telemedicine networks require the utmost performance since the information carried on them can literally mean life or death. Quality is equally important, since medical images or sounds require the highest resolution possible so doctors can quickly discern ailments and make accurate

diagnosis. What is needed is a high-quality; reliable, compatible, far-reaching network able to serve a remote section of the country 24-hours a day.

### Network Solution

Cisco Collaborative Care<sup>®</sup>, running on a Cisco Medical-Grade Network, is a key element of the OTN solution. Collaborative Care uses audio and videoconferencing technologies to interconnect teams or individuals on demand, leading to greater efficiency, better decisions and more effective care. The Collaborative Care solution enables clinicians and first responders to consult with patients and specialists across the province.

**“The Network has a profound impact on the access to, and the quality of, health care for our community. Outcomes can only improve when patients can connect with physicians or specialists without the expense of travel time, lost work and the costs and stresses of going to an appointment far from home.”**

— Sandra Whittle, nurse, Medical Day Clinic at Leamington District Memorial Hospital

The Collaborative Care solution is a cost-effective, audio and videoconferencing system. As easy to use as dialing a telephone, it fosters improved communication among geographically dispersed users leading to improved productivity. Geographically dispersed isolated clinical experts can be called in on a case without having to travel, saving time, money and often lives.

OTN's technical standards and guidelines ensure secure, manageable connectivity between the patient and the clinician at video teleconferencing monitors. Based on Cisco's network, it provides reliable, high-bandwidth video conferencing solutions that allow for the seamless transfer and delivery of data and images over 395 locations. OTN also relies on Cisco Unified Communications services to streamline communications, enable compatibility and maximize reliability. Cisco Unified Communications, a combination of voice and IP communications products and applications, in combination with Cisco services, which enables organizations to communicate more effectively, is valuable in a hospital setting because it provides near 100 percent up-time, ideal for patient care, and simplicity, which means doctors and nurses need not be systems experts. Cisco Unified Communications provides a standardized architecture across their Cisco Medical-Grade Network delivering both crystal-clear voice and data images. A Cisco Medical-Grade Network connects all stakeholders in the healthcare system to a single information and communications infrastructure. It also provides resiliency and reliability for collaborative solutions that improve the efficiency and effectiveness of healthcare.

Another key element of the network solution is Survival Remote Site Technology (SRST), only available from Cisco. SRST is a completely redundant system with specialized routers designed to handle call management. “We needed to know that our system would remain up and running regardless of conditions, and that quality would be maintained,” says Dr. Brown. “SRST and its underlying technology made that happen.”

One of the mission critical services that OTN delivers over the Cisco Medical-Grade Network is Telestroke. Telestroke brings together videoconferencing and CAT scan Diagnostic Image Sharing over the network. Using this equipment, specialists around the province are on 24-hour call to

assist hospitals in rural and remote areas. In the early hours of a stroke, doctors can use a drug to break down the blood clot and reverse the attack, but the same drug can also make a patient bleed to death. So doctors use OTN to reach experts quickly so that they can receive direction on how to properly administer the drug in the few hours that it can make a difference.

## Business Results

To date, more than 800 specialist physicians across more than 200 medical specialties and more than 1500 health professionals (including family physicians, physiotherapists, nutritionists and speech language pathologists) use the network to provide care to their patients. More than 32,000 consultations are handled each year via OTN. Medical care in Canada is provided by their provincial governments and accounts for 10% of the country's Gross Domestic Product. OTN's use of telemedicine saves the province of Ontario about Canadian \$8 million each year in travel costs alone.

### SOLUTIONS & PRODUCT LIST

#### Cisco Healthcare Solutions

- Cisco Collaborative Care
- Cisco Unified IP Phones, 7900 Series
- Cisco Unified Contact Center Express
- Cisco Unified Mobile Communicator
- Cisco Unified Survivable Remote Site Telephony

Carlene Wetherall, a registered dietician, marveled at the clarity of the images. "As the RN and the patient filled out the Beyond the Basics meal planner, I could watch and provide input—just as though I was there in person. And certainly the patient was happy to be seen promptly, in the local hospital that they were most familiar with."

OTN may also contribute to patients in Northern Ontario avoiding hospital visits entirely. Studies show that decreased access to medical care results in increased hospitalization rates. Such is the case for Northern Ontario, where hospitalization rates are 25 percent higher than the provincial average. "By bringing health care to outlying communities, we can reduce hospital visitations," Brown says. He added that about 13 million kilometers of travel are avoided in a typical year. "I will actively promote telemedicine services in our rural community and be a resource to develop new areas of clinical consultations," says Dr. Denise Coulas. "My experience has been that the service provided by the network has no limits."

And all this good medicine and financial savings are going down easy for the citizens of the region. Though far from the most technically savvy population, surveys are showing that more than 90 percent of patients who received services via telemedicine networks were "satisfied" or "very satisfied" with the experience.

Brown also noted that OTN is sharing what it has learned with visitors from Canada's other provinces, Russia, South Africa, New Zealand and the United States.

## For More Information

To find out more about Cisco Healthcare Solutions go to: <http://www.cisco.com/go/healthcare>.



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