



- DAVID M. WATTLING, E-HEALTH EDITOR -

## Bridging the Gap...

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The world is getting smaller, so they say. Not physically, but through rapid developments in Information and Communication Technology (ICT), through cell phones, Internet, broadband networks and the like.

Still, when it comes to health care we are way behind others. Many Canadians are still isolated or getting even more isolated with regard to access to health care. This isolation, brought about by geographic obstacles, is compounded by the scarcity of clinicians. It is estimated that Ontario needs 1,000 more physicians right now; some believe this to be closer to 2,000. More and more people are finding it difficult to get access to a physician when they need one. The message that used to be heard in northern rural areas has recently begun to emanate from the "burbs" too.

For a moment put yourself in the shoes of a mother, or a father of a child with a severe chronic disease, who is living hundreds of miles away from the city and has no primary care provider. When the need to consult a specialist in one of the major health centres in the city arises, you would first spend days trying to get an appointment with him or her. Then spend a few days more collecting and arranging all necessary medical information required for the visit, that then need to be transferred to the specialist. Finally when the time comes, you will have to take a few days off work to take your child to the city. Imagine the amount of money either lost or spent on this whole exercise, and the agony your sick child would undergo during the long and tiring journey. Going beyond that, there are losses in productivity at your work and possible costs associated with employee benefits and the effort required to duplicate and transport your child's medical records.

Surely there is a way technology can improve this? Well, telemedicine has taken on this challenge and is making a difference. Telemedicine is bridging the distance between healthcare providers and the consumer with enabling ICTs. Now the specialist does not need your ill child to be physically present in his or her office. This technology is ideally suited for a large country like ours where people are spread over a vast geographic area. Telemedicine has been in existence in Canada for quite a while, and we can be proud of having a few clear leaders in this area.

Northern Ontario Remote Telecommunication Health (NORTH) Network is one such leader. This is the largest Telehealth Network in Canada, and has been serving remote populations in Northern Ontario since 1998. It has now spread its wings to cover over 100 Telehealth sites including 68 hospitals, 11 nursing stations and regional cancer centres, mental health centres, correctional facilities, educational partners and professional associations. It is at present equipped to cater to more than 80 specialities, and there are plans to extend the coverage up to 150 sites by end of 2004. In 2003 there were over 5,100 medical consultations performed on the

network. In June alone this year there were over 1,000 consultations, putting the growth rate at 100% year-over-year.

The NORTH Network recently received 5.7 million in new funding from the Ministry of Health and Long Term Care. In announcing the funds Minister George Smitherman stated "Telemedicine is proof of the power of technology in delivering quality healthcare over vast distances". This is evidence that telemedicine is now an accepted component of the Ontario Healthcare System infrastructure.

However with every great accomplishment comes a new set of challenges. For telemedicine the challenge is becoming integrated into routine health care service processes. In the meantime the rest of the healthcare system is not standing still either. It too is undergoing tremendous change as it strives to deliver health services seamlessly across the continuum of care, move toward electronic health records and regionalize services and program management.

Generally, telemedicine providers will now need to explore new avenues to integrate with this moving target. Let me share with you some of the thoughts on this matter.

There are four major areas one could focus on with regard to Telemedicine. These are the scheduling and workflow process, the information transfer process, Telemedicine session itself and the supporting infrastructure.

First let's consider how the scheduling process could be improved. The network could offer a secure, web based application where member physicians could login to request a Telemedicine consultation, exchange messages on scheduled visits and upload relevant information. Eventually, once fully refined, the whole process could move into a physician clinic or their office where it can be fully integrated into their daily workflow rather than be used as a specialized service.

The information transfer process is the most challenging obstacle to surmount, due to the varied nature of information sources. In a broad sense, the solution would allow information to be transmitted in a multitude of formats, like standards based messages, scanned images, text based documents and even video and audio clips. The specialist would then be able to review this supporting information from where ever they are.

The Telemedicine consultation process can be enhanced by providing the clinicians with devices that act as remote sensing organs; well, mainly as their eyes and ears, at least for the time being. Examples of such devices are high definition video conferencing equipment, vital sign monitoring technologies and auscultation and endoscopic devices.

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What then constitutes the supporting infrastructure part? All other processes that help improve and sustain the Telehealth service can be included here. Like appropriate privacy and security of patient information, standard processes and guidelines, funding formulas for clinicians and organizations who take part in Telemedicine visits and removing barriers, like licensing requirements for inter-provincial consultations etc.

There are some leading institutions where cutting edge technology is utilized to push Telemedicine to the next level; the Johns Hopkins University is one. In a recent such study Telemedicine was used to provide full time intensivist services to a surgical ICU from a remote location. (Having a full-time dedicated intensivist during daytime is included as an evaluation criterion in Leapfrog's patient safety standards). There had been a 68% decrease of Severity-adjusted ICU mortality during the intervention period and a 44% reduction in the incidence of ICU complications, which resulted in 33% reduction of ICU costs.

When thinking about what the future holds for Telehealth, what do I see in my crystal ball?

There is an image of a group of clinicians, a specialist surgeon, a radiation oncologist, an anaesthetist and a family physician all meeting on-line with a patient who is at home, with support from a family member and a care provider discussing the management choices of his newly diagnosed malignancy. All participants have access to the patient's shared health record, including the most recent MRI study and lab values with the most recent set of provincial wide treatment guidelines and outcome results.

Wouldn't that be neat?



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