



# Four Counties Health Services Goes Wireless

*Rural practice increases collaboration and improves patient services at point of care*

Sarah Padfield

Sarah Padfield is the Site Manager, Four Counties Health Services.

Doctors who choose to work in small rural community hospitals often do so because they find the country lifestyle appealing. They willingly trade big-city amenities for a less crowded, slower-paced environment, where they can be closer to nature and raise their families in relative peace of mind.

Traditionally, rural practice has also meant giving up ready access to colleagues in large medical centres and teaching hospitals. Being isolated by distance and geography was seen as a disadvantage in choosing the country option, because physicians need to collaborate with their peers and specialists in other centres to stay current on the latest medical techniques and strategies.

Recruiting physicians has therefore been one of the greatest ongoing challenges for hospitals like Four Counties Health Services (FCHS), a 16-bed hospital located in Newbury, Ontario – halfway between London and Chatham. Since it was built in 1966, FCHS has gone through many variations of service provision. Today it has an emergency department and a variety of outpatient services. And like many rural hospitals, it has been working hard to recruit physicians for its entire history.

The growth and introduction of technology that allows communities and individuals to connect with one another through a virtual connection has revolutionized the ability of rural community hospitals to connect with larger centres, giving them greater access to services and information. And it enables doctors to collaborate more easily over large distances.

FCHS has invested heavily in technology to complete the continuum of care it provides for patients. With the help of technology services provider NexInnovations, our family practice medical clinic is now linked seamlessly to our hospital through a wireless network. The facilities are in turn linked to larger community hospitals throughout the region and an academic teaching centre at the University of Western Ontario in London.

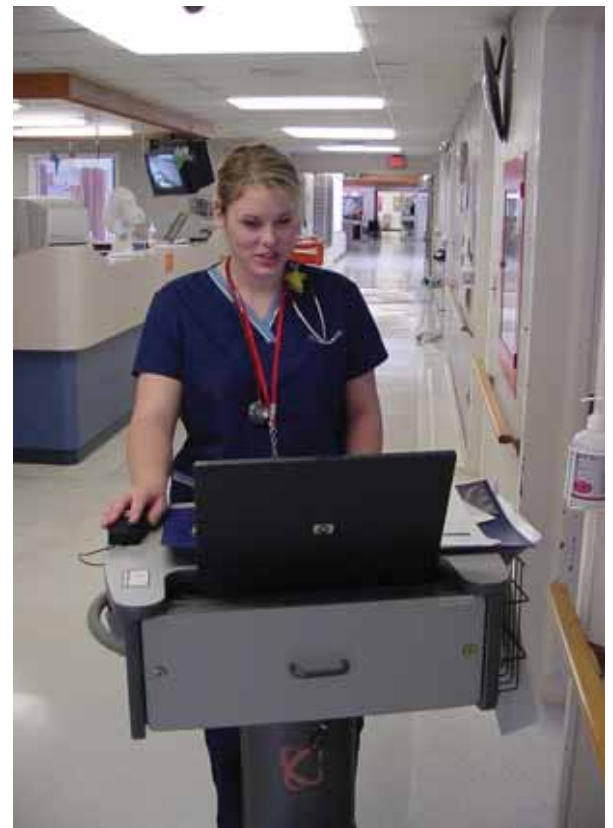
The wireless solution allows physicians to access an electronic medical records system that integrates lab results, notes, diagnostic images and patient scheduling

in a secure environment. This streamlines processes and ultimately helps staff provide better-quality patient care by relieving the burden of some of their administrative tasks. Working with electronic medical records, X-rays and lab results also helps the clinic and hospital reduce the amount of paper used, and eliminates film. Overall, it enables a more collaborative working environment, which will ultimately help us recruit and retain physicians.

Doctors in our community now have the best of both worlds – a great country lifestyle, as well as technological support for their professional responsibilities vis-à-vis their patients.

## Going wireless

FCHS has always been a progressive hospital. With the advent of Internet technology, our strategy was to make





it work for us – to improve the quality of healthcare in the community by making our remote location a non-issue. We set a goal to become one of the most technologically advanced rural hospitals in Canada.

Last year, three local physicians began negotiations to create a collaborative partnership and bring their solo practices into one family practice clinic affiliated with the hospital. We saw this as a great opportunity to become a fully wireless organization. The doctors chose to adopt an electronic medical records system that integrates lab results, notes, diagnostic images and patient scheduling in their practice setting. However, they needed access to this application while onsite at the hospital; providing them with a wireless infrastructure was the most logical solution.

If we were investing in a wireless solution for the clinic, it also made sense to implement it throughout the hospital. The idea was to provide flexibility for physicians, clinicians and nursing staff in terms of how they access information. We envisioned a near-paperless family practice environment – where staff could use medical applications seamlessly without being tied to a desk – and information would flow between the hospital and the clinic, providing a more complete picture of a patient's medical history.

There were some complex challenges to overcome in making this goal a reality. Security was of primary concern, as hospitals must ensure that any patient information being shared across the network is safe from disclosure. Since the family practice clinic is a distinct operation from the hospital, we needed to keep the wireless environments separate while enabling them to interoperate easily. Essentially, we required one infrastructure that would serve both the needs of the hospital and the needs of the clinic in a secure manner.

We also needed to ensure the network met specific regional standards and was configured to support our regional Electronic Patient Record system, including a PACS (Picture Archiving Communications System) application. In July 2005, FCHS became a film-less diagnostic imaging environment thus allowing staff to send and view X-rays, ultrasounds MRIs and CT scans throughout a network of eight hospitals including the London Health Sciences Centre. In November 2005, FCHS also became part of a regional Electronic Patient Record, a shared regional database of patient information throughout the Thames Valley region. FCHS is perhaps the smallest hospital in the Province to adopt these types of integrated patient information technology solutions.

Implementing such complex systems means we have the same technology that runs in a large environment in our smaller one. However, that level of complexity is spread over fewer people, and there is a limit to how far you can go with your internal resources. With limited internal IT resources, we knew we needed to bring in an expert partner to deploy the wireless network properly.

### Meeting the security challenge

We turned to NexInnovations for help, because we had worked with them on other projects and we knew they had been involved in configuring and deploying hospital networks across the region. They were familiar with our organization, as well as the larger context in which we operate and understood our security needs.

As a member of the Thames Valley Hospital Partnership, FCHS shares a common networking strategy with other healthcare facilities in the region. Security issues around the configuration of the network needed to be addressed so we could communicate with these outside partners without compromising the integrity of our internal information. There was also the issue of keeping private clinic data separate from hospital data.

The first task they undertook was a thorough site survey. Hospitals are constructed robustly – the infrastructure needs are unique because the solid walls block a high percentage of wireless signal transmissions. It is important to understand where to locate access points so the entire area is covered securely.

After the site survey they did a design lay-up of the logical network infrastructure to meet our needs. Once the plan was approved, it took three weeks to deploy the new infrastructure. This included implementing the wireless equipment, testing the connectivity throughout the hospital and clinic, and configuring the various mobile and peripheral devices to the network.

The rollout went smoothly with no major hiccups. By bringing in a consulting company, we had access to a level of expertise that we could not support on our own within a small hospital and we were able complete the deployment in a very short timeframe. Working with

NexInnovations enabled us to leverage the skills of technicians with the highest level of Cisco certification to design and implement our network.

### **Serving doctors and the community**

With the wireless solution in place, physicians, nurses and patients in the family practice are now benefiting from the most modern electronic medical records system available – delivered over a state-of-the-art wireless network. Physicians and nurse practitioners working in the clinic can take Table PCs between rooms, and access charts, information and medical applications anywhere within the hospital. Administrative tasks are streamlined and easier to accomplish more quickly, so staff has more time to devote to patient care.

Now that we have deployed a regional EPR system, a film-less diagnostic environment, an integrated Laboratory Information System and other major clinical applications, we can leverage the wireless infrastructure to reduce the amount of paper that we use and automate many of our practices.

Of course we always keep our eye on the number one goal - to improve patient care. With a printed exam result or chart, only one person can look at the information. Using an electronic chart, a physician at FCCHS can look at the information at the same time

as a specialist in London – they can consult together looking at the exact same information, the exact same images, and the exact same lab results so they make a better more sound diagnosis or treatment plan for the patient.

Patients will see an even greater benefit from a one-stop shop for medical information. It will improve wait times and increase the flow of information through the hospital and clinic, freeing up even more physician time.

In a small rural hospital, it is essential to provide physicians with the ability to collaborate and access information they would have if they were in a larger centre. Technology is the foundation of our strategy to reduce that gap, so that the health of people in our community is not compromised because they don't live in a major urban area.

FCCHS has determined that information technology will provide the utmost return on investment by ensuring the needs of both doctors and patients are met. An overall vision and a strategy for using technology can improve the quality of information that clinicians, physicians and nurses need to serve their patients.

If you can improve the timeliness of that information with wireless solution, it will lead to more satisfaction from a staff perspective, as well as better health for everyone. ●