

Healthcare transformation begins with ICTs

Building the next generation of eHealth

What we often forget, as we withdraw money from a bank machine, miles away from our home branch, is that the electronic transformation in remote banking took at least two decades to complete. "That included many late nights, with challenges and roadblocks along the way," says Wayne Gudbranson, CEO of Branham Group Inc. "Healthcare in Canada is currently in the midst of a similar transformation and there is a recognition that Information and Communication Technology (ICT) systems are needed to help improve the inefficient components of healthcare delivery."

eHealth is still dramatically and consistently under-funded, with about two per cent of overall healthcare budgets being allocated to ICTs, explains Gudbranson. But there are some exciting transitions in electronic healthcare capabilities that could significantly improve the patient experience. For example, until recently, 70 per cent of all eHealth acquisitions were made within the acute care/hospital sectors, because the perception was that these were the primary modes of healthcare delivery. In fact, the opposite is true. The greatest strain on the healthcare

system is delivery of chronic care, managed by primary care physicians, home care providers and community care and long-term care facilities.

"There is now a greater recognition that we need an integration of ICT or eHealth across the continuum of care, rather than the siloed process of ICT procurement we've seen over the past years," says Gudbranson. This means that when a patient goes into the hospital for a procedure, the nurses and doctors put together a care plan that will follow the patient, electronically, upon release to his/her general practitioner, home care provider or any other facility where follow-up treatment will occur.

"With the infrastructure in place, we're now targeting the components of eHealth that will significantly benefit both providers (clinicians) and patients," says Don Newsham, CEO of COACH: Canada's Health Informatics Association. The focus over the next few years, he explains, will be on utilizing the electronic health record to

facilitate needs such as chronic disease management and communicable disease management.

Still, according to COACH, there remains a shortage in human resources: qualified, competent, experienced, credentialed health informatics professionals who can support the eHealth agendas of both the private and public sectors.

"As part of our solution, we recently announced a credential, The Certified Professional in Healthcare Information and Management Systems – Canada (CPHIMS-CA), that requires recipients to complete a bachelors degree, three to five years of health informatics experience, and two exams which demonstrate their capability and professionalism," says Newsham.

Despite its shortfalls, eHealth is beginning to make an impact on the Canadian healthcare system. "With leadership both federally and provincially, Canada has a real opportunity to combine world-class knowledge of healthcare delivery with the talent of hundreds of companies that are producing and developing eHealth technologies in this country," says Gudbranson.



Access. Quality. Reduced costs.

GE Healthcare IT Canadian initiatives attract global attention



Mike Clarke,
Canadian General Manager,
GE Healthcare IT

In Canada, General Electric Healthcare IT has been successful at partnering with hospitals and other members of the healthcare system to implement a number of electronic health solutions that help deliver better care to more people at lower cost.

"We're seeing provincial and federal funding begin to manifest itself in impactful ways, improving the patient experience and avoiding unnecessary procedures and costly patient transfers," explains Mike Clarke, Canadian General Manager of GE Healthcare IT.

In recognition of its leadership role, GE Healthcare Canada was recently presented with the "IT Hero Award" from the Information Technology Association of Canada (ITAC). This prestigious award recognizes GE for its innovative technology solution used in the Emergency Neuro Image Transfer System (ENITS). This technology offers improved clinical workflow, providing increased access for rural populations that may not have timely access to emergency neurological specialists. ENITS supports the rapid transfer and storage of neuro-treatment head-scan images from various facilities throughout Ontario to a central site, from which experts can access images quickly, determine treatment options and provide consultation for patients regardless of location. The project, with a roll-out completion date of early 2010, has already resulted in \$9 million dollars in savings by avoidance of costly and unnecessary patient transfers.

"By listening to our customers and taking the time to understand their com-

plex challenges we are able to leverage our expertise in building innovative solutions with which we can truly impact the health of Canadians," says Clarke. "We are delighted to have been recognized by ITAC with an IT Hero Award, and would like to thank eHealth Ontario and the leadership at London Health Sciences Centre for their cooperation and collaboration on this project."

Another healthcare solution, launched in March of this year, is the Digital Imaging Repository (DI-r) that electronically connects hospitals and medical centres throughout Southwestern Ontario. "By providing

clinicians a longitudinal patient view through GE's Centricity OneView, the project aligns with Canada Health Infoway and provincial initiatives to create a pan-provincial and eventually a pan-Canadian Electronic Health Record (EHR)," says Clarke.

The system, put simply, allows a physician to review and consult from any location, regardless of the specific computer system used to store an image or the site from which the patient data originated. This will not only improve the quality of care but will also prevent unnecessary patient transfers and duplication of images, reducing patient exposure to unnecessary radiation.

The impact of the existing projects by GE Healthcare IT Canada aligns with the impact sought out by the recently launched initiative by GE Corporate.

This spring, GE launched a global commitment to reducing costs, improving quality and expanding access for millions of people. Through its "healthymagination" initiative, GE is committing US\$6 billion over six years to develop low-cost, high-tech solutions for healthcare in Canada and around the world in a more sustainable way.

Many of the GE Healthcare IT innovations underway in Canada have garnered international attention and are being used as a model for future "healthymagination" projects.

"Canada is at the leading edge of healthcare IT", says Clarke. "With so many successful projects that touch on access, quality and cost, the **United States and other parts of the world are looking to Canada as a leader in eHealth and working to establish connectivity similar to what we've achieved.**"

GE's **healthymagination** is a three-pronged approach, set to make measurable improvements in global healthcare systems by 2015, which will be validated by Oxford Analytica, an independent, Oxford-based international research and consultancy firm. GE's commitments include:



Access. Fifteen per cent increase in the public's access to services and technologies essential for health, reaching 100 million more people every year



Quality. Fifteen per cent efficiency and quality improvements for customers through simplifying and refining healthcare procedures and standards of care



Reduced Costs. Fifteen per cent reduction in the cost of procedures and processes by utilizing GE technologies and services



Bell provides realistic path to an eHealth vision



Stéphane Boisvert,
President,
Bell Business Markets

The vision is compelling:

- An ER team has access to a patient's vital signs even before paramedics rush the gurney in from the ambulance

- A nurse in a remote community sends live video of a wounded patient to a specialist in an urban hospital to get expert treatment advice

ment advice

- An administrator in a busy downtown facility streamlines the admissions process to get the most from a limited supply of beds, simultaneously improving care and saving money

There is no shortage of wishes for people in healthcare, especially given the promise eHealth holds to improve patient care and ease the pressure on the entire health system.

But it's one thing to have a vision, quite another to know how to implement it.

"Many administrators would love to adopt an eHealth vision," says Stéphane Boisvert, President, Bell Business Markets. "But the reality is, they also need a realistic evolutionary path, one that is appropriate for their operation, whether it's a small clinic, a large hospital or even a provincial ministry.

"Above all, the pathway must have a strong foundation: a highly reliable information and communications infrastructure that is robust today and flexible enough to adapt as technologies evolve," adds Maude Prud'homme, Associate Director – Healthcare Solution Portfolio Manager with Bell Canada. "Without that strong foundation, the vision continues to be a wish list."



All eHealth solutions—from electronic records to telehealth applications—depend on that base infrastructure. It must be able to seamlessly bring together multiple applications, as most eHealth solutions take existing Information Communication Technology (ICT) solutions and adapt them for healthcare situations.

"So you start with a really sound infrastructure, and focus on attaining a high level of ICT penetration," says Prud'homme.

Many organizations have turned to Bell for exactly that, knowing that Bell is an acknowledged industry leader in next-generation services and applications such as collaboration, unified communications, managed security, network management and IP VPN.

For example, in a project at the Pierre Boucher Health Centre in Longueuil, Que., Bell developed a

wireless solution that lets emergency responders transmit the patient's vital signs to the ER team directly from the patient's house, before the race to the hospital. As a result, time to treatment has been reduced to about half the recommended time.

Bell also designed and implemented the most extensive end-to-end, Internet Protocol (IP)-based healthcare network in Ontario at the William Osler Health Centre in Brampton, enabling caregivers to have remote access to patient lab results, prescription data and healthcare records. For patients, the network enables quick bedside access to nurses, faster prescription ordering and automated registration.

In terms of telehealth, Bell is working with Sherbrooke University hospital to enable caregivers in remote communities to get advice via videoconference on specialized wound management from urban specialists.

The company also has experience in Lean Healthcare projects. In one case, in the Cardiology unit of the Centre hospitalier universitaire de Québec, Bell's solution helped reduce admission delays by 40 per cent by eliminating eight steps in the process.

"Bell can be the right arm for a hospital CIO or a ministry health manager to refine a vision and set a realistic path to get there," says Prud'homme. "It takes a concerted effort across an organization to make sure good initiatives don't end up in silos but are coordinated to deliver the best results for patients and for the health system."

Adds Boisvert: "That is Bell's strength: whatever the eHealth vision, we have the experience to provide the foundation—the clear path—to deliver on it."

xwave and Healthcare 3.0

Taking Canadian healthcare to the next level



Nadeem Ahmed,
Managing Director of
Healthcare, xwave

While the media focuses on the United States' healthcare debate, Canada is quietly in the midst of an eHealth transformation that is seeing patient data collected and shared through interoperable electronic health records (iEHRs). Comprising components such as integrated registries, viewers, data repositories and imaging systems, iEHRs help physicians improve clinical outcomes and lower costs. They also improve management of chronic disease. With



Healthcare 1.0 (pre- 2004)

Focus: manage episodic health

Solutions:

- Departmental Hospital Information Systems (HIS)
- Physician scheduling and billing systems
- Picture Archiving and Communication System (PACS)

Healthcare 2.0 (2004 to 2008)

Focus: manage patient health

Solutions:

- Clinical viewers, provincial registries, provincial repositories,
- Health Integration Access Layer (HIAL, CAIS)
- Regional Picture Archiving and Communication Systems (PACS)

Healthcare 3.0 (2009 to 2012)

Focus: manage population health

Solutions:

- Individual health record
- Preventive care
- Chronic disease management
- ASP-based EMR systems

diabetic patients, doctors can now answer important questions such as: **How many patients have had a blood test or eye exam in the past year? How many are enrolled in a preventive care program? How many are adhering to it?**

These questions couldn't have been answered accurately in the pre-iEHR world," says Nadeem Ahmed, Managing Director of Healthcare at xwave. "This information was trapped in paper folders and was difficult to aggregate and analyze."

These enabling iEHR capabilities, and their evolving connectivity to physician EMRs, are the result of large-scale, province-wide initiatives encompassing numerous stakeholders and multiple points of care, including physicians, labs, pharmacies, hospitals and community care centres.

"xwave is successfully turning these disparate components into cohesive solutions," says Ahmed. "As one of Canada's leading iEHR integrators, we are involved in six of the eight iEHR implementations currently underway in Canada. Rather than focus on particular products, xwave integrates them to improve workflows and lower costs."

Ahmed adds that ultimately, health IT systems must create value, whereby increased eHealth spending results in better clinical outcomes. "We're beginning to see this correlation, and it's one that can make Canada a global healthcare leader."

