

Thames Valley Shares Digital Imaging to Transform Patient Care

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Canadian healthcare institutions today face many of the same challenges as private sector enterprises:

- they need to increase their productivity and efficiency,
- they need to adapt to changing business conditions,
- they need to reduce operational costs and complexity, and
- they need to align their business processes and their information and communication technology (ICT) systems.

But these organizations also are subjected to unique, additional pressures – ones that are driven by the most critical, personal and emotional of considerations – our health and well being.

Healthcare organizations are under intense demands to modernize the delivery of healthcare services, improve patient management, shorten wait-times, and protect privacy and security. And they must do all this in an environment of limited financial and human resources and major structural reforms.

Healthcare providers are more aware than ever of ICT's essential role in addressing these demands and enabling them to deliver health services quickly, appropriately and comprehensively. Consequently, organizations are increasingly examining and adopting a Shared Services strategy to achieve their many objectives and ultimately enhance the quality of patient care.

Shared Services are a business approach and an ICT architecture designed to allow organizations to share key parts of their technology infrastructure, applications and business processes within their own facilities, with other institutions and with the general public. Through Shared Services, healthcare providers can improve their effectiveness and efficiency by sharing best practices, enhancing collaboration, making better decisions and improving access to information.

The Thames Valley Hospital Planning Partnership (TVHPP), consisting of eight healthcare institutions in Southwestern Ontario, has been visionary in the adoption of Shared Services and ICT solutions to transform the delivery of healthcare. The TVHPP

was formed to co-operatively explore the feasibility of integrating and sharing strategic healthcare services and priorities, including diagnostic imaging, clinical care, laboratory systems and capital planning. Many hospitals in the region were seeking opportunities to form strategic alliances, as some require access to the expertise and resources outside of their own settings to meet the needs of their patients.

In the area of diagnostic imaging and radiology, the TVHPP has taken a bold step in the implementation of Shared Services and ICT. They have established a Digital Imaging Network that enables healthcare providers to quickly and securely share, access and store digital medical images, such as x-rays, MRIs, ultrasounds and CT scans, across departments and medical facilities. The TVHPP Digital Imaging Network, one of the first Shared Services projects in Canada, is meeting the objectives of enhancing the efficiency of service delivery and eliminating duplicate practices across the member hospitals.

The project is unique because, as a shared initiative, the hospitals have agreed to adopt and use common standards and infrastructure, rather than each developing its own system.

The network facilitates knowledge sharing and improves diagnoses, as the consultative process is significantly enhanced with authorized specialists in any of the member hospitals having immediate access to a patient's images. And it eliminates the expensive use of film. The network also reduces the need for radiologists and patients to travel or be transferred from one institution to another, as can be the case particularly in rural communities. Patients can receive care closer to home as images can be accessed by specialists anywhere on the network. As a result, the speed and accuracy of treatment decisions are enhanced.

"We are improving patient care with our ability to access and exchange medical images and information. Patients don't have to wait for images to be developed and manually transferred," said Dr. Donald Taves, chief of radiology, St. Joseph's Health Care London and a professor at the University of Western Ontario.



Dr. Phil Vandewalle, Chief of Medicine, Strathroy-Middlesex General Hospital and Becki Willis, PACS/RIS Administrator, Middlesex Hospital Alliance

“They are immediately available for review, even from a remote site,” he added. “Now, a patient can leave the department after the images have been taken knowing that the specialist will be able to review and then discuss their case promptly. No lost or misplaced film is an added benefit.”

With the network, hospitals are mitigating the shortage of diagnostic imaging professionals in the province. Also, the requirements of smaller hospitals, which may not be able to afford their own radiology departments even if specialists are available to staff them, are now addressed. Healthcare providers can have a full view of a patient’s medical history with images and reports accessible as part of her electronic health record, making it easier to treat patients efficiently, affordably and reliably. And patient management is enhanced through the tracking of order status and the greater availability of radiologists. Film searches have been eliminated and procedure duplications greatly reduced which increases productivity and saves time. Storage space requirements also have been dramatically reduced. For example, London Health Sciences Centre has achieved \$1.2 million in film savings alone.

“We are transforming the delivery of patient services with this solution and through our collaborative efforts in the region,” said Diane Beattie, integrated vice president and chief information officer, London Health Sciences Centre and St. Joseph’s Health Care London.

Shared Services are gaining momentum within government agencies. In a 2005 report, International Data Corp., a leading market research firm, found that in Canada, 39 per cent of responding agencies had already implemented Shared Services or were in the process of rolling them out within their organizations.

The imperative for ICT solutions in the healthcare sector is clear. They must be able to support the use,

access and distribution of medical and administrative applications, records and data among all stakeholders in the healthcare ecosystem. They must also enable healthcare organizations to drive operational efficiencies, improve productivity and reduce costs, as well as simplify their ICT environments and integrate new technologies.

Healthcare technology solutions need to meet the challenge of the ever-increasing volumes of healthcare information and provide the flexibility to manage this data across tiers of storage, along with continuous, proactive

checking to ensure data integrity. The solutions also can play important roles in assisting healthcare organizations to comply with regulatory and privacy requirements for the storage, transmission and protection of patient data.

By aligning their ICT infrastructure – which comprises all of their computing hardware, software and services – with their business processes, organizations will be able to more effectively adapt to clinical and regulatory changes, and improve patient services and safety.

The TVHPP’s Digital Imaging Network project encompasses a number of innovative technologies, including HP’s Medical Archiving Solution, which provides a shared IT infrastructure for the long-term storage of medical images. Part of HP’s information lifecycle management portfolio, the Medical Archiving Solution is designed for radiology practices within hospitals, clinics and diagnostic imaging centers. The solution allows healthcare providers to access vital information securely and simultaneously in order to collaborate, wherever they are located.

The HP Medical Archiving Solution is based on open standards for interoperability and individual hospitals, imaging clinics or large hospital systems can share their infrastructure to house image types used in different picture archiving and communication systems (PACS). Users can integrate text-based information from health information systems, such as patient records and insurance data, and migrate images from various PACS to one centralized, consolidated, long-term storage solution.

“HP has considerable experience and expertise in the healthcare sector, so we were very confident that they could support our mission to meet the needs of our communities with a patient-centred philosophy and innovative models of patient care,” said Beattie.

An essential element of the relationship between the TVHPP and HP is a profound commitment to governance. HP's governance model represents a clear philosophy and a systematic methodology founded on disciplined and rigorous business practices and processes that ensure the right resources, knowledge and services are applied rapidly to meet strategic and operational objectives. A relationship based on such governance will result in stronger management, deeper collaboration, better communications, greater efficiency and improved cost-effectiveness. Without these attributes, relationships may fail, and be characterized by a conflict in objectives, a difference in expectations and an absence of trust. As a trusted advisor, HP is also gaining considerable insight from the TVHPP on its future plans in the delivery of healthcare services so that they will be able to flexibly develop, adapt and deploy ICT solutions to support its changing requirements.

HP teamed on the Digital Imaging Network project with GE Healthcare, a major provider of transformational medical technologies, and Cerner Corp., a leading supplier of healthcare information technology. GE Healthcare is providing the PACS and Cerner is providing its Cerner Millennium® platform for electronic patient records and radiology.

The TVHPP project is funded by Canada Health Infoway, an independent, not-for-profit corporation that supports the development of electronic health information systems across the country, and the Ontario Ministry of Health and Long-Term Care.

The TVHPP is composed of Alexandra Hospital in Ingersoll, Four Counties Health Services in Newbury; London Health Sciences Centre; St. Joseph's Health Care in London; St. Thomas Elgin General Hospital; Strathroy Middlesex General Hospital; Tillsonburg District Memorial Hospital, and Woodstock General Hospital.

To build on the success of the TVHPP project, planning is underway to expand the shared digital imaging network to other Southwestern Ontario area hospitals. The work of TVHPP in transforming healthcare services is being watched and evaluated by healthcare institutions around the world.

The project is an historic step forward in healthcare and Shared Services. It is leading the way in executing an innovative strategy and model that will accelerate the flow of patient information; deliver more adaptable, responsive and cost-effective health services; and increase business agility and technology value. ●