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High-tech ecosphere

Southlake Regional Health Centre, in Newmarket, Ont., is helping to spur the rise of innovative health-care technologies by allying with ventureLAB, a regional economic development agency.

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Northern Ontario's approach

Gaston Roy, chief information officer at Health Sciences North, in Sudbury, comments on the shared approach taken by hospitals in the region. It has reduced costs while bringing advanced systems to facilities that normally wouldn't benefit from expensive solutions.

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Laboratory automation

The lab at Saint-Eustache Hospital, in Quebec, has long been a leader in lab automation. It is now taking new steps in the post-analytical phase, and has implemented a paperless solution that makes it easier to locate and manage samples.

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Bioabsorbable stents

UHN is the first hospital in Ontario to use bioabsorbable stents in cardiac surgery. The scaffolds, which open and support previously



blocked blood vessels, are said to be a better solution than permanent stents.

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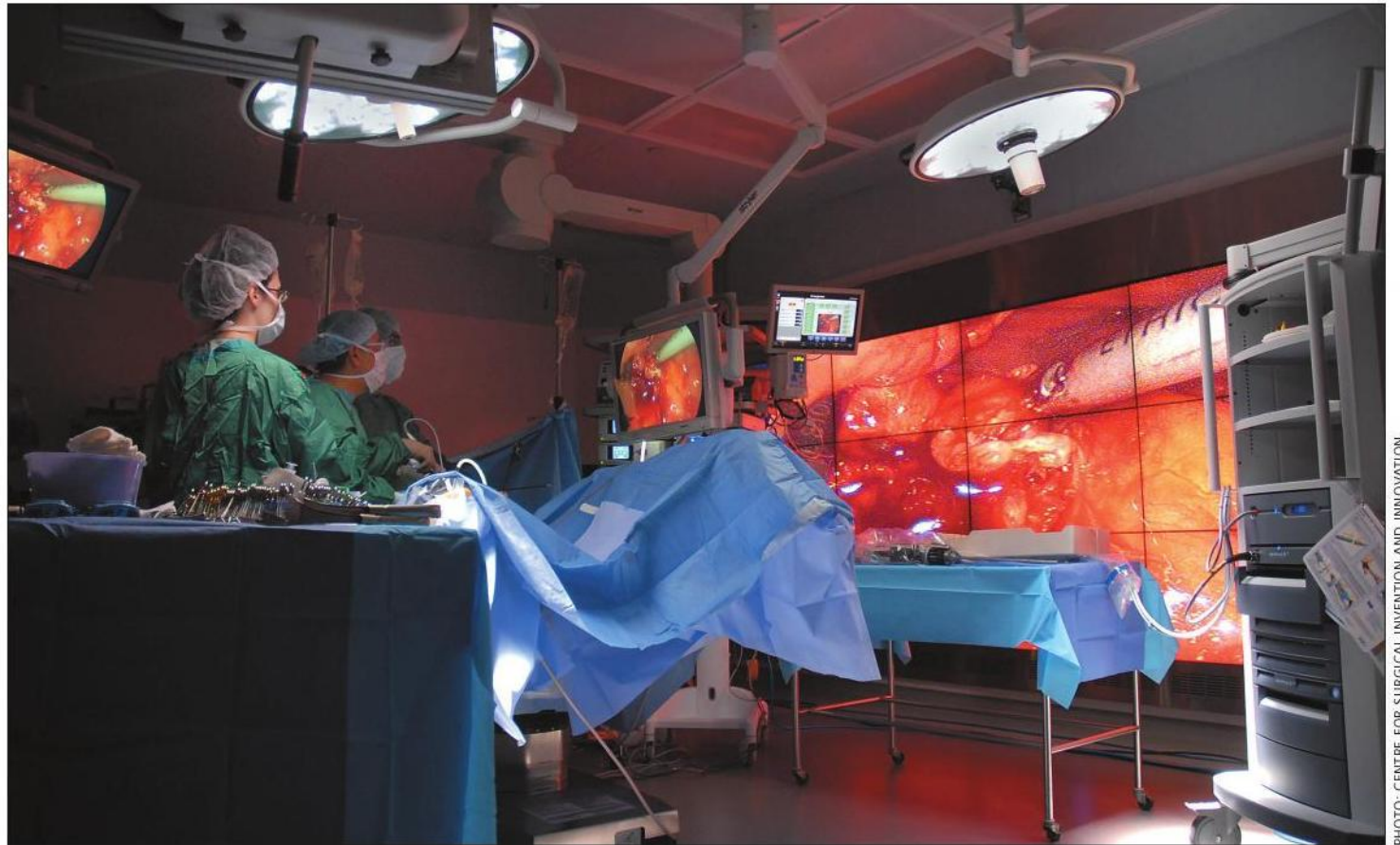


PHOTO: CENTRE FOR SURGICAL INVENTION AND INNOVATION

Canadians drive development of surgical robotics

Physicians and surgeons across Canada are devising new technologies and techniques using medical robots. Pictured above is a team at the Centre for Surgical Invention and Innovation (CGII) in Hamilton, which among other projects, is working on a new approach to treating breast cancer using MRI-guidance of surgical robots. Teams in Toronto and Vancouver also have exciting programs under way. **SEE STORY ON PAGE 12.**

UHN opens operating room of the future, today

BY JERRY ZEIDENBERG

TORONTO – A giant operating room – four times the size of most ORs and containing a dazzling panoply of imaging hardware and software – is opening this month at the University Health Network. Called the GTx-OR (short for guided therapeutics operating room), the multi-million dollar facility houses a Siemens dual-energy CT Flash scanner and an Artis Zeego robotic fluoroscopy machine – the

first site in the world to have them in a single operating room.

The top-of-the-line equipment will enable physicians to quickly and accurately image patients while they're on the operating table, helping surgeons to provide the best possible outcomes through the use of image-guided procedures.

A team led by Dr. Jonathan Irish, chief of surgical oncology at University Health Network, has been planning the GTx-OR for several years. The project was spawned by the

Techna Institute, a research and development centre at UHN that's designed to produce and refine technologies to improve patient care.

Dr. Irish is also clinical lead for the guided therapeutics core of the Techna Institute. The surgical innovations devised at Techna are to be tested and further developed in the GTx-OR after extensive pre-clinical experimentation.

Dr. Irish and his colleagues are excited to finally start using the R&D operating room

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sense and simplicity

Post-analytical automation simplifies storage and retrieval at Quebec lab

Located in the Laurentian region of Quebec, Saint-Eustache Hospital serves a population of more than 265,000 as part of the Centre de Santé et de Services Sociaux du Lac-des-Deux Montagnes (Health and Social Services Centre of Lac-des-Deux-Montagnes). Each year, the hospital laboratory performs two million analyses, one million for biochemistry and the remainder spread across microbiology, hematology, serology, anatomic, pathology and cytology departments. With 82 employees, the lab is a 24-hour, seven-day operation.

Since 1995, Saint-Eustache has used automated solutions from Technidata Canada of Montreal to increase lab productivity, shorten turnaround times and improve accuracy, including the TD-Synergy laboratory information system; TD-Web, a module that enables users to request tests, manage sample collection and access test results using an Internet browser; and, TD-HC, a dedicated product for histology and cytology disciplines. Considered to be among the most automated lab environments in Quebec, Saint-Eustache introduced pre-analytical lab automation as early as 2001.

More recently, the hospital lab is focusing its attention on the post-analytical phase, implementing a paperless solution based on new features in the latest release of TD-Synergy that make it easier to locate and manage samples. Canadian Healthcare Technology's Dianne Daniel had the opportunity to learn more about this important step in the hospital's automation journey from Francois Beaugard, diagnostic services manager at the Health and Social Services Centre of Lac-des-Deux-Montagnes.

Here's what he had to say about the implementation, scheduled to go live this spring:

CHT: What challenge is the hospital laboratory trying to solve by adding automation to the post-analytical stage?

Beaugard: Traditionally, the serum bank at Saint-Eustache was managed manually, using paper-based processes that made it difficult to locate a given sample or specimen when needed. The hospital was looking for a centralized solution that would enable a more accurate, paperless process, allowing for faster and more reliable sample searches.

CHT: How will the new automated process work?

Beaugard: Specimen storage is now handled by our Siemens' robotic chain which automatically stores samples and maintains a location record. This information is then sent to our TD-Synergy lab information system using Siemens' middleware software called syngo Lab Data Manager. Location information is available to all hospital laboratories, not just the central lab or the lab involved in the specific sample collection and testing. This means that if an extra blood sample is needed for some reason in the hematology lab, for example, a technician can easily verify if such a sample is already available in the biochemistry lab, avoiding unnecessary collection of a new blood sample and facilitating test execution.

Once our implementation is complete, not only will we be able to quickly check

for sample availability, but we will also be able to maintain an automated record or audit trail of which test has already been performed on which sample.

CHT: How is the new process different from what was done before?

Beaugard: Currently, there is very little identification of tubes and other samples. The hospital has a serum bank for short- and long-term storage of samples, but

information will be centrally stored and available to all hospital laboratory departments for easy retrieval of sample information, including location, via a computer.

CHT: What benefits are you expecting to see once your implementation is completely up and running this spring?

Beaugard: It will be much easier for laboratory staff to find the samples they



ILLUSTRATION: LINDA WEISS

there is no centralized storage management. Samples are numbered by hand, the information is registered on paper and samples are stored in boxes using an alphanumeric location system. When a sample is requested, we first have to find the box and then the tube.

This implementation will completely change the way we work concerning the post-analytical phase, transforming the process into an automated, paperless process.

We also expect slight productivity improvement, increased accuracy and time savings related to searching for specimens and avoiding unnecessary sample collections. There will also be a clear quality improvement, especially for short-term specimen storage. Being able to check for samples quickly and easily will help us to avoid unnecessary collection and may even facilitate testing that might not be performed otherwise.

CHT: Is training required to use the new technology? If so, how are you going about it?

Beaugard: We are using a 'train the trainer' approach. One person is responsible for training in each department and continuous support will be provided during the first few weeks of going live.

CHT: Is your implementation considered a model for other hospitals?

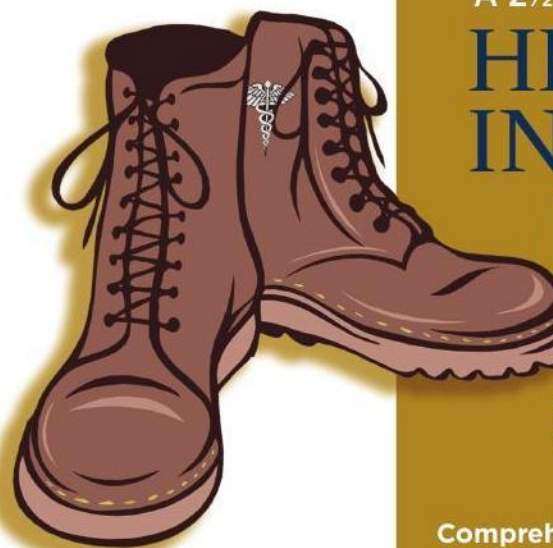
Beaugard: We believe so. We are aware of other hospitals that have automated their serum banks for biochemistry, but they don't have a centralized solution that allows technicians to find samples beyond their own laboratories. Typically the storage solution is local as opposed to centralized.

CHT: What additional automation steps are planned for the future at Saint-Eustache?

Beaugard: Our next steps include implementation of a partial robotic chain for hematology, using an integrated slide maker with stainer, which is scheduled for 2014.

CHT: What advice would you give to other hospital laboratories that are trying to improve their productivity using post-analytical automation?

Beaugard: Be ready for change and prepare technicians for change well in advance.



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