

NIAGARA HEALTH SYSTEM SETS NEW TECHNOLOGICAL STANDARD

A case study in modern data management

By Robert Copeland



In Canadian hospitals, there are traditionally a number of isolated, independent systems that move and manage medical data. Instructions and data from such systems as medical imaging, drug plans, treatment procedures, registration, and surgical outcomes are all operated in silos. As such, millions of dollars are wasted each year because information doesn't flow efficiently from system to system. When the right data doesn't get into the right hands at the right times, the result is unnecessary paperwork, diagnostic mistakes, and redundant treatments—all of which can lead to needless spending and increase risk.

To tackle this problem within its own network, Niagara Health System (NHS) decided to replace two aging and costly facilities with a new, modern building that would use state-of-the-art technology to make information move faster, smarter, and more accurately. Along with Infrastructure Ontario, Plenary Health Niagara, PCL and JCLP, NHS tasked Plan Group to design and deliver an infrastructure for the new building that would reduce operational costs, meet environmental standards, and be adaptable to technological advancements.

A GAME-CHANGING SOLUTION

It was critical for NHS to have an infrastructure that would deliver operational efficiencies in the short term and allow easy integration of new technologies in the future, while always

keeping cost and patient experience top of mind. This new hospital facility would take four years to build, which meant Plan Group had to design a system with technology that was not released to the public yet.

"In order to implement relevant technology solutions, we had to understand what our vendor partners would be releasing three years from now," says Dwayne Howden, Director of Intelligent Building Infrastructure at Plan Group. "As an on-going best practice when building large state of the art facilities, we take a hard look at the specific goals for a new facility, the technologies available, and the long-term technological and industry trends around the world."

"We are always looking three to four years ahead in order to continuously evolve technology innovations of today," Howden adds.

Ultimately, the proposed solution was innovative and game-changing: A converged communications network. Based on a wireless distributed antenna system, this network is designed to seamlessly handle all of the hospital's data and communication needs via a single system. From medical records and data retrieval, to safety and telecommunications, the new system (the first of its kind in the country) would take advantage of interconnectivity and digital intelligence to make sure the right people would receive the right information at the right time.

The goal of the new system was maximum efficiency at minimum cost. And when technology changed – as it always does – it could be incorporated into the infrastructure as seamlessly as possible.

“This solution changed the perception on how to construct medical facilities for many people involved,” noted Glen Landry,



Director of Technology Innovation at Plan Group. “The traditional approach to construction is to wire facility systems and have them completely isolated from the business and clinical systems. All data at NHS was going to flow over one converged network. This was also converged with the wireless and cellular networks as well. Therefore whatever retrieval device you are using, computer, tablet, or smartphone, the one converged network will deliver that information.”

CALCULATED RESULTS

When NHS commenced operations in Spring 2013, the new, million-square-foot complex became a truly advanced, modern healthcare facility that completely transformed how information is shared. The ground-breaking converged communications network continues to drive operational costs down, help patients get what they need when they need it, and provides a scalable platform for technological change. The network will ensure information flows more efficiently, allowing caregivers to make fast, informed healthcare decisions.

“Working with Plan Group means that you have access to infrastructure architects who have a profound understanding of healthcare technology, and all the new advancements, not to mention, they can translate them very easily into how the system can best be built, on the ground. Together with Plan Group, we are a team, building a modern healthcare complex,” said Jeff Wilson, Regional Manager for ICT, Niagara Health System.

The new hospital facility in St. Catherine’s has been operating for one full year with great success and very tangible operational efficiencies. Based on the successful implementation at NHS, this technology based approach to healthcare construction is quickly becoming the industry standard.

TECHNICAL INNOVATION – THE NEW HEALTH CARE STANDARD

Today, the requirement for our medical system to be more efficient and scalable to the demands of the public and the practitioners has never been higher. Building on the technology innovations deployed at NHS, we are now architecting unprecedented levels of digital self-awareness for new hospital systems through the development of analytics and automated work flows.

These continuing innovations will promote Canadian Healthcare as one of the most efficient and advanced systems in the world. ■

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The Niagara Health System (NHS) was formed in 2000 and is Ontario’s biggest and most intricate multi-site hospital network and Canada’s leading joint healthcare facility. With seven sites throughout the Niagara region, NHS provides a wide range of inpatient and outpatient services to nearly half a million residents across a dozen municipalities. NHS includes over 4,000 employees, 600 physicians and 1,000 volunteers.