

GE Healthcare



GE Healthcare delivers major imaging infrastructure solution to the Juravinski Hospital Redevelopment Project

An operational readiness case study featuring GE Healthcare commitment, collaboration and technology.



imagination at work



To stay on the leading edge, and to equip clinicians with the right environment and the right tools, Hamilton Health Sciences (HHS) has invested more than \$650 million in the redevelopment of its hospitals. The redevelopment, done in conjunction with Infrastructure Ontario and the Ontario Ministry of Health and Long-Term Care, includes the Juravinski Hospital, formerly known as Henderson General Hospital.

The opening of the first phase of the Juravinski facility included the new Department of Diagnostic Imaging & Nuclear Medicine, which provides a wide range of diagnostic and interventional services for both inpatient and outpatient populations.

CHALLENGES

It is difficult to convey the enormity and complexity of a capital undertaking such as the Juravinski Re-Development Project, of which the new Diagnostic Imaging (DI) Department was just one part.

In addition, “The Infrastructure Ontario aspect represented a huge paradigm shift from the way we have previously managed imaging equipment installations,” says David Wormald, Integrated Assistant V.P., Diagnostic Services & Medical Diagnostic Unit, Hamilton Health Sciences. “The need for effective communications and willing collaboration would be paramount throughout this project because of the many interests involved and strict rules to abide by.”

One such rule, a rule related to project timelines, required the selection and purchase of medical imaging equipment for the new DI Department a full year ahead of when it would actually be used. This was driven by the building contractor’s need for product specifications – mechanical, electrical, HVAC and so on – with which to properly design and build the new rooms to house this equipment.

Another significant challenge HHS faced, which stemmed from acquiring such a large amount of DI equipment at one time – 13 major items, including MRI, CT, angiography, mammography, x-ray and nuclear medicine systems – was the need to accommodate the many different imaging groups and individual radiologists and technologists.

“Understanding the ‘needs and wants’ of each party was critical; each had their own ideas about what equipment they wanted

and how they wanted to configure and use it,” reports Carol Whiteman, Senior Project Manager, Capital Development, Juravinski Hospital. “We wanted to come up with a set of requirements and specifications that would not only be used in the RFP and allow us to take advantage of a bulk purchase, but also give our users something to be excited about.”

SOLUTION

Following Ontario’s Broader Public Sector (BPS) guidelines for an open, fair and competitive RFP process, the Juravinski Hospital went to the market in search of vendors to provide the needed imaging equipment. After reviewing and scoring responses from leading DI equipment manufacturers, a committee chose GE Healthcare as its equipment partner for the majority of the equipment for the new Juravinski DI Department.

“With Juravinski’s expanded Operating Room and Emergency Department facilities, we expected more complex patients, and we felt GE Healthcare was best able to provide the high quality of equipment needed to support a patient population with increased acuity,” explains Wormald. “No other vendor’s equipment ranked as well as GE Healthcare’s – almost every single GE Healthcare device was scored #1 or #2 by each of the modality groups,” reports Whiteman.

According to Whiteman, the RFP also involved numerous other hospitals; however, GE Healthcare was the only vendor to create a custom offer for Juravinski, with a suite of products best suited to the required specifications and special bulk pricing.

“We were looking for creativity from bidders, but GE Healthcare was really the only vendor that came through,” states Whiteman, pointing out in addition that, “GE Healthcare truly understood what we were looking for, and focused on collaboration and value-add and its commitment to supporting the project from start to finish.”

Commitment to Latest Technology Scores Big

When asked about the hospital’s choice of GE Healthcare and how GE Healthcare proposed to address the challenge the hospital faced as a result of having to make equipment choices far in advance of the actual go-live date, David Wormald stresses that GE Healthcare’s commitment to provide the latest products that are Health Canada-approved and commercially available was a big factor in the decision-making.

“We clearly needed some flexibility on the part of our imaging equipment partner to resolve this issue, and this is where GE Healthcare stepped up to the plate,” says Wormald, describing how GE Healthcare was committed to not allowing the hospital to move into its new space with old technology.

The roster of equipment GE Healthcare installed and helped the hospital operationalize in time for opening day of the new Juravinski DI Department includes, amongst others: a 3T GE Discovery™ MR750 MRI scanner; a GE Discovery™ CT750 HD CT scanner; two GE Innova™ 4100IQ Angiography systems; two GE Senographe™ Essential Mammography systems; GE Infinia™ Hawkeye™ Nuclear Medicine equipment; and three GE Discovery™ XR650 Digital Radiography systems.

“GE Healthcare’s 3 Tesla MRI is a huge step forward from our previous 1.5T scanner in terms of helping us to expand our MSK and oncology imaging capabilities – areas we consider centres of excellence at Juravinski – and to better support our research and academic work,” says Wormald.

Amongst other things mentioned as noteworthy, the Discovery CT scanner features GE Healthcare’s new ASiR (Adaptive Statistical Iterative Reconstruction) algorithm that enables radiation dose reduction by up to 50% – a technology exclusive to GE Healthcare. GE Healthcare also upgraded the hospital’s existing GE Healthcare CT scanner to also include the ASiR dose-reduction technology. In addition, the two new GE Healthcare mammography units were initially installed in the hospital’s existing imaging area, and then subsequently moved to the new department when it opened. This allowed staff to take advantage of new digital technology earlier, since they had been using analog technology in the old department.

“We were delighted and appreciative that GE Healthcare would do these things,” exclaims Wormald. “It was a clear indication they were trying to accommodate our needs and ensure our imaging team had the appropriate tools.”

GE Healthcare Support Goes Beyond Technology Sell

In keeping with its focus on the customer’s needs and supporting the Juravinski project, GE Healthcare’s effort went beyond simply selling and installing its products. Citing the staff’s concern about moving to a 3T MRI as an example, Whiteman explains how, “The user team required specific information and solutions to concerns, and GE Healthcare was superb at providing this.”

In another example, involving Digital Radiography (DR), GE Healthcare spent a considerable amount of time with the user group to understand the types of imaging they were doing, what their workflow challenges were and how best to support them with the right equipment.

“Based on what was learned, GE Healthcare configured each of the three new DR rooms slightly differently, giving users the flexibility to deal efficiently with the various types and numbers of patients and exam requirements,” states Whiteman.



Solid Project Management Keeps Installation on Track

Drawing upon its experience with large, complex, multi-modality infrastructure projects, GE Healthcare assigned a Project Manager and implemented a best-practices project management methodology to identify, schedule, coordinate and track the myriad of activities required to support the Juravinski Redevelopment project.

“Having an experienced GE Healthcare Project Manager as our single point of contact with GE Healthcare, and having the same GE Healthcare team working with us from beginning to end to support our own Project Manager and project team, was very helpful and demonstrated that GE Healthcare was definitely committed to helping us succeed,” says Carol Whiteman.

“GE Healthcare was superb at helping our users make timely and informed decisions and keeping the project moving forward on schedule,” offers Whiteman, whose sentiments are complemented by David Wormald’s comment that, “The year-long installation involved bringing the interests of all stakeholders to the table, and GE Healthcare demonstrated its ability to listen and to seek an understanding of those interests, especially the needs of the radiologists and technologists.”

Creativity/Flexibility Overcome Training Challenges

The go-live of the new Juravinski Imaging Department happened overnight – the entire move from the old location taking place over a Civic Holiday weekend at the beginning of August, with staff and equipment fully operational the next day.

To ensure readiness of the staff, a training program was launched by GE Healthcare one year earlier, beginning with the assignment of a dedicated GE Healthcare training coordinator to organize and facilitate clinical application training across all the modalities. The coordinator worked closely with Juravinski project managers to identify key people needing training within each modality group, including ‘super users’ willing to teach others and be the go-to person to help others in each group, and then to develop training plans specific to each group.

The ensuing months leading up to the go-live required considerable orchestration by the GE Healthcare coordinator to plan, schedule and ensure smooth delivery of training sessions required for 60 to 70 people, mainly radiologists and technologists across the modalities.

To maximize the number of staff who could take the training, while eliminating travel costs and minimizing impact on staff and department operations, GE Healthcare brought its training program, normally conducted in Milwaukee, Wisconsin, to Hamilton and customized it to meet the needs of the new Juravinski imaging department.

“We had very limited access to the new area and to the new equipment for training purposes before the opening, so GE Healthcare also arranged off-site opportunities for our senior technologists and super users to gain hands-on experience using the same equipment at other nearby GE Healthcare installations,” says Wormald.

Along with continued training sessions, the last weeks leading up to go-live saw GE Healthcare Application Specialists teaching the hospital technologists how to configure the clinical applications that support the imaging equipment and set up the requested protocols for how they wanted patient data to be handled.

Beyond the training aspect of the Change Management required to support user adoption of the new technology and to ensure users are comfortable and confident using the new equipment, Wormald mentions that, "As a result of knowledge transfer regarding Lean practices that we gained from previous projects with GE Healthcare's Performance Solutions group, we were able to do some work with GE Healthcare to understand and optimize imaging workflow, including looking at the technologist/radiologist 'circle of work' and how they would interact with the new equipment, their new space and their patients."

RESULTS

Go-Live Well Supported

According to David Wormald, the relocation of people, supplies and equipment to Juravinski's new Department of Diagnostic Imaging & Nuclear Medicine department was successful overall because the right project structure had been set up and key stakeholders were consistently present at the table, with roles and accountability clearly defined. There was also a strong willingness amongst all parties to collaborate and cooperate to solve problems, and everyone was united in the goal to ensure a seamless transfer of service provision to the new department.

During the go-live, GE Healthcare Field Service Engineers were on site to ensure the new equipment ran smoothly, as well as Application Specialists, who supported the users and got them up and running and comfortable with the basic imaging functionality. By the end of the first week, the Juravinski imaging team was fully up to speed and once again handling their regular patient load – business as usual.

"GE Healthcare was very supportive as we ramped up in a new environment, with new technology, newly trained staff, new workflow and new processes for how their equipment would be managed and serviced," says Wormald, adding that, "GE Healthcare was onsite supporting them throughout, and helping minimize disruption."

The Field Service Engineers and Application Specialists remained available over the ensuing weeks, not only to support users on an as-needed basis, but also to provide fine tuning and calibration of the equipment, upgrade the software to provide newly released features and help users start using advanced applications.

Wormald points out that, "Over the course of the first year, GE Healthcare was very flexible and accommodating in having its applications people come back whenever required to ensure our staff was optimizing the imaging functionality we purchased."

New Environment Supports New Opportunities

A year later, even with the new equipment all installed and fully operational and the old equipment decommissioned or relocated, the hospital is still seeing continued GE Healthcare support in the form of new technology they can take advantage of, along with the associated orientation and training.

"In our new facility, we have been successful in supporting an increasingly complex patient population," reports Wormald, quickly pointing out that, "And because of the productivity and efficiency we have gained through the use of the GE Healthcare technology, we haven't had to add any additional staff."

By way of example, increased technical functionality has enabled the hospital to support the introduction of new procedures, such as the CyberKnife, a robotic radiotherapy system for treating tumours, and new therapeutic procedures, such as Radio Frequency (RF) Ablation, used for removing dysfunctional tissue. The new imaging equipment infrastructure and expertise at Juravinski has also enabled the hospital to expand its high-risk breast cancer MRI program in conjunction with Cancer Care Ontario.

A modern, advanced technology imaging environment is also enabling the hospital to provide even greater support to its research partners at McMaster University and engage in additional research opportunities. This, in turn, is also supporting the hospital's efforts to recruit and retain first-rate radiology staff and fellows.

"What GE Healthcare brought to the table was project management, problem solving, and collaboration and perseverance with all stakeholders, which was critical, especially in terms of the change management piece," states Wormald, who goes on to say that based on cultural fit and their comfort with GE Healthcare at their side, GE Healthcare was subsequently awarded a Multi-Vendor Services contract to manage service provision for all the imaging equipment at HHS, totaling roughly 129 devices across all sites.

Wrapping up her own thoughts on the Juravinski imaging project, the hospital's Carol Whiteman concludes by saying that, "GE Healthcare brought all their resources to the project to help us succeed. Overall, they played a key role in making this a winning project for all parties."



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