

# Healthcare Quarterly

## Learning from Success

... responding to long and  
widely disparate wait times.

Ontario's  
Wait Time  
Information  
System

NEWS FLASH: Canada, May 6, 2009

# TELUS Health Space

the first electronic health platform for Canadian customers.

TELUS Health Solutions has signed an agreement with Microsoft whereby TELUS is granted the exclusive license to host and operate the HealthVault platform for the development of a consumer-focused health service in Canada. The service will be called TELUS Health Space, powered by Microsoft HealthVault.

The service will be the first of its kind in Canada, letting Canadian consumers manage and store their personal health information and have access to value-added applications like personal health record, chronic disease management, pediatric care and wellness products that will allow better management of their health and the health of their family.

For more information on how you can empower your patients and transform care delivery visit [telushealth.com/healthspace](http://telushealth.com/healthspace)

For more information about Microsoft Health Industry Solutions please visit [microsoft.com/health](http://microsoft.com/health)



### Ontario's Wait Time Information System: Learning from Success

The expression goes that we should learn from our mistakes. Well, here is an opportunity for us to learn from our success.

The development and implementation of information technology (IT) for use in healthcare is a challenging pursuit. Projects that fail, particularly if they are funded by government, can be intensely criticized by the Auditor General, opposition parties and/or the news media. When there is a major IT success (and there are many), they receive little praise or recognition. The result? The public and political leaders believe incorrectly that failure of government IT projects is almost inevitable.

This Special Issue of Healthcare Quarterly is entirely devoted to breaking this vicious circle by celebrating a major government-funded health IT success – Ontario's Wait Time Information System (WTIS). The WTIS is no minor success. In just four months a strategy was created. In less than two years the system was developed, deployed and put into use in hospitals throughout Ontario. As of March 2009, 86 hospitals are using the system. Data captured from more than 3,300 doctors is being used to calculate and publicly report on wait times involving more than 2.2 million surgical procedures and MRI/CT scans. And it doesn't end there. The WTIS is expanding to include more of the continuum of care, notably the wait times of alternate level of care patients who have received their hospital care and are waiting to be discharged to another, more appropriate, setting.

The goals for developing the WTIS have been met and wait times in Ontario are down significantly. Moreover, the WTIS is enabling hospitals and doctors to focus on their accountability and on improving their performance.

So what can we learn from this very successful endeavour? The answer to this question is covered from a variety of perspectives in the excellent articles included in this Special Issue. I was pleased to be asked to review these articles and write this editorial, as it helped crystallize in my mind what really makes IT projects successful. Before you read them, let me summarize what the authors believe are a few of the key ingredients that helped the WTIS achieve its remarkable goals:

- Appointing a talented leader (in this case Sarah Kramer) as the single point of accountability for the IT development and implementation;
- Capitalizing on existing public pressure, government priority

and provider interest in achieving the system's primary goal (in this case reduced wait times);

- Using an outside agency (Cancer Care Ontario) that had the expertise and ability to secure the necessary health IT staff, vendors and private sector consultants to get the work done quickly and effectively;
- Building upon experiences of other jurisdictions such as the Saskatchewan wait times project and the wait times work of the Ontario Cardiac Care Network of Ontario;
- Engaging volunteers, clinician leaders, researchers and management leaders as role models on expert panels;
- Building momentum through transparency, and accountability through public reporting;
- Using a highly orchestrated communications program to minimize misinterpretation or misinformation (i.e., "a single source of truth");
- Identifying the value proposition for all participants (in this case the value of additional funding to increase provider capacity and shorten patient wait times);
- Creating a sense of urgency due to the Minister's public commitment to demonstrate results before the October 2007 election;
- Maintaining a narrow scope of deliverables through beta testing in five hospitals so that the project would not succumb to scope creep;
- Reporting early successes (quick wins) to help gain support from resistant stakeholders;
- Committing to a "no surprises" approach to project management so, if some aspect steered off course, correction occurred immediately with effective issue escalation and management;
- Making room for local hospital solutions because of hospitals' diverse sets of skills and needs.

That sums up some of the key learnings that are evident for the successful implementation of Ontario's WTIS. I hope you will enjoy reading the articles that follow as much as I did. Most importantly, I hope all readers learn from this tremendous story of health system success.

- Tom Closson  
President and CEO  
Ontario Hospital Association

# In this issue *Vol.12 Special Issue 2009*

## 1 Editorial

Tom Closson

## 8 The Times They Are A-Changing: What Worked and What We Learned in Deploying Ontario's Wait Time Information System

Hugh MacLeod, Alan Hudson, Sarah Kramer and Murray Martin

Developed and deployed in just two years, Ontario's Wait Time Information System has made the province a leader in wait times. The project also engendered the development of a provincial client registry, the cornerstone of an electronic health record.

## 16 Developing an Effective IM/IT Strategy

Sarah Kramer, Joanne Walker and Will Falk

Ontario has struggled to implement information management/information technology strategies on a large scale. This article examines the success factors that enabled the rapid development and execution of the province's Wait Time Information Strategy.

## 20 Commentary

### Waiting for the Referee or Refereeing the Wait? CCO's Role in Hosting and Deploying the Wait Time Information System in Ontario

Terrence Sullivan

When challenged with the prospect of deploying information systems for wait times in Ontario, Cancer Care Ontario was faced with either waiting for the provincial referee to provide a road map, or playing a leadership role in building, developing and refining a Wait Time Information System.

## 22 Achieving Accountability

Sarah Kramer, Rachel Solomon and Chris Dingman

With the mandate to develop and deploy Ontario's Wait Time Information System, Cancer Care Ontario set out to establish a culture of accountability based on providing support, building trust and developing collaboration. This article shares how accountability was achieved.

## 28 Questions & Answers

### Sustaining Accountability

Matthew Anderson and Lewis Hooper

## 30 Taking it to the Streets: Delivering on Deployment

Dafna Carr, Vickie Welch, Trish Fabik, Nadir Hirji and Casey O'Connor

Deploying information management/information technology initiatives in healthcare within Ontario has met with mixed success. What were the essential factors allowing the team to deploy the Wait Time Information System? Beginning with the Beta/Phase I, this article shares the approach, processes and tools that the WTIS project team devised to deploy this complex and ambitious IM/IT initiative.

## 40 Questions & Answers

### Words from the Street: Delivering on a Provincial Mandate at the Local Level

Jenny Cockram and Keary Fulton-Wallace

## 43 Building a Sustainable System: The Making of the WTIS

Steve Hall, Rami Thabet and Mark Dummet

Developing a sustainable information management/information technology solution to address Ontario's Wait Time Information Strategy within aggressive timelines presented enormous challenges. This article describes how the system met business and clinical needs and gave individuals the data that would improve access to care.

## 56 Questions & Answers

### Lessons Learned for Local Solutions

Glen Kearns and Gino Picciano

## 62 An Integrated Approach to Stakeholder Engagement

Dafna Carr, Arlene Howells, Melissa Chang, Nadir Hirji and Ann English

Success required engaging thousands of individuals at all levels of healthcare, many of whom were skeptical and resistant, and motivating them to use the Wait Time Information System and its data. This article describes the team's three-step approach in creating awareness through communications, building support for adoption and making the change real through training.

## 71 Commentary

### Stakeholder Engagement: Thoughts from a Clinician

Michael Marcaccio



# Information you've been **waiting for**

CIHI has just released new comparable information on wait times showing progress across the country.

Providing information that's comparable is key to helping all of us improve patient care.

This is the difference data makes.

[www.cihi.ca](http://www.cihi.ca)

CIHI—*taking health information further*



Canadian Institute  
for Health Information

Institut canadien  
d'information sur la santé

### 73 **Turning Data into Meaningful Information**

Julian Martalog and Shalu Bains

This article discusses how with reliable wait list information extracted from the Wait Time Information System, the province, hospital boards, hospitals and clinicians can all make more informed decisions leading to improved access to care. In addition, patients now have information to manage their own care and, through provincial targets, have a sense of how quickly they can and should receive treatment.

### 78 **Commentary**

#### **Clinical Engagement for Performance Improvements**

Jonathan Irish

### 84 **Transitioning Initial Success into Sustainable Results: The Future of the WTIS**

Sharon Pfaff, Lynn Guerriero, Julian Martalog, Lindsay Arscott, Sandra Fontaine and Joseph Laforet

While deployment moved forward, Cancer Care Ontario also had to ensure that Wait Time Information System support post go-live was sustainable. Hospitals would require extensive upfront support, so from the outset CCO established an in-house operations function. Innovative practices would lay the groundwork for what would become CCO's support model for the Wait Time Information Program.

### 89 **Commentary**

#### **With a View Toward the Future**

Denise Zarn

### **White Papers**

### 58 **EMPI Provides a Critical Foundation for Improving Access to Care**

Lorraine Fernandes

Enterprise master person index (EMPI) technology is essential to the Wait Time Information System. EMPI is a patient information and linking system used to identify patients on multiple waiting lists for the same procedure, thereby preventing duplication. EMPI is the underlying technology for Ontario's Client Registry.

### 80 **The Linked Person Record: Managing the Cancer System through Data Integration**


Darren Edery

Cancer Care Ontario worked with Adastra Canada to build the first Linked Person Record for Cancer in North America. When the record is fully implemented, it will facilitate an understanding of how cancer patients move across the continuum of care, while fully protecting the privacy of individual health information.

### 91 **Investing in Health IT: A Stimulus for a Healthier Canada**

Peter Neupert

Fundamental to health Information Technology is the creation of a totally connected, patient-centred healthcare system. Technology can bring it about by encouraging better outcomes and innovation, linking patient data and empowering individuals to be stewards of their own health, with public and private sectors working together to create an efficient, data-driven system.



Imagine:  
Connected systems  
that bring together all  
your health information.  
And deliver it to the  
right person at the right time.



Canada Health Inforoute  
Santé du Canada

**On our website:**

- Learn more about Electronic Health Record systems in Canada
- See videos of the latest EHR success stories
- Discover how EHRs will benefit you and your family

Faster diagnosis time, improved patient care, connected physicians, nurses and pharmacists, and quality care to remote patients

To get these results, the Government of Canada is funding our work with all provinces and territories to create Electronic Health Record systems that will bring together your health information where and when it's needed.

Even today, clinicians who are using some of these technologies are reporting increased efficiencies and more time for patients.

[www.infoway-inforoute.ca](http://www.infoway-inforoute.ca)

# Healthcare Quarterly

Volume 12 Special Issue • 2009

## How To Reach The Editors And Publisher

Telephone: 416-864-9667 Fax: 416-368-4443

## Addresses

All mail should go to: Longwoods Publishing Corporation, 260 Adelaide Street East, No. 8, Toronto, Ontario M5A 1N1, Canada.

For deliveries to our studio: 54 Berkeley St., Suite 305, Toronto, Ontario M5A 2W4, Canada

## Subscriptions

Individual subscription rates for one year are [C] \$90 for online only and [C] \$107 for print + online. For individual subscriptions contact Barbara Marshall at telephone 416-864-9667, ext. 100 or by e-mail at bmarshall@longwoods.com.

Institutional subscription rates are [C] \$310 for online only and [C] \$430 for print + online. For institutional subscriptions, please contact Susan Hale at telephone 416-864-9667, ext. 104 or by e-mail at shale@longwoods.com.

Subscriptions must be paid in advance. An additional 5% Goods and Services Tax (GST) is payable on all Canadian transactions. Rates outside of Canada are in US dollars. Our GST number is R138513668.

## Subscribe Online

Go to [www.healthcarequarterly.com](http://www.healthcarequarterly.com) and click on "Subscribe now."

## Reprints/single Issues

Single issues are available at \$30. Includes shipping and handling. Reprints can be ordered in lots of 100 or more. For reprint information call Barbara Marshall at 416-864-9667 or fax 416-368-4443, or e-mail to bmarshall@longwoods.com.

Return undeliverable Canadian addresses to: Circulation Department, Longwoods Publishing Corporation, 260 Adelaide Street East, No. 8, Toronto, Ontario M5A 1N1, Canada

## Editorial

To submit material or talk to our editors please contact Dianne Foster-Kent at 416-864-9667, ext. 106 or by e-mail at dkent@longwoods.com. Author guidelines are available online at <http://www.longwoods.com/pages.php?pageid=5&cat=249>

## Advertising

For advertising rates and inquiries, please contact Susan Hale at 416-864-9667, ext. 104 or by e-mail at shale@longwoods.com.

## Publishing

To discuss supplements or other publishing issues contact Anton Hart at 416-864-9667, ext. 109 or by e-mail at ahart@longwoods.com.

*Healthcare Quarterly* is published four times per year by Longwoods Publishing Corp., 260 Adelaide St. East, No. 8, Toronto, ON M5A 1N1, Canada. Information contained in this publication has been compiled from sources believed to be reliable. While every effort has been made to ensure accuracy and completeness, these are not guaranteed. The views and opinions expressed are those of the individual contributors and do not necessarily represent an official opinion of *Healthcare Quarterly* or Longwoods Publishing Corporation. Readers are urged to consult their professional advisers prior to acting on the basis of material in this journal.

*Healthcare Quarterly* is indexed in the following: PubMed/Medline, CINAHL, CSA (Cambridge), Ulrich's, Index Copernicus and Scopus.

## Editor

Tom Closson

## Associate Editor

Dafna Carr, Director, eHealth Strategy & Partnerships, Cancer Care Ontario

Melissa Chang, Independent Consultant, Communications and Stakeholder Management

## Editorial Coordinators

Roopa Singh, Independent Consultant, Communications

Sereen Hindawi, Communications Coordinator, Cancer Care Ontario

## Contributors and Advisors

Matthew Anderson

Lindsay Arscott

Shalu Bains

Diana Benjamin

Mark Boudreau

Dafna Carr

Tania Carlyle

Melissa Chang

Jennifer Cockram

Giselle Commissiong

Chris Dingman

Mark Dummett

Ann English

Andriene Ferguson

Sandra Fontaine

Keary Fulton-Wallace

Lynn Guerriero

Steve Hall

Nadir Hirji

Lewis Hooper

Arlene Howells

Alan Hudson

Jonathan Irish

Trish Fabik

Will Falk

Glen Kearns

Sarah Kramer

Joseph Laforet

Nicole La Roche

Hugh MacLeod

Oonagh Maley

Camille Marajh

Michael Marcaccio

Murray Martin

Julian Martalog

Casey O'Connor

Sabrina Padewski

Gino Picciano

Sharon Pfaff

Amanda Purdy

Brianna Ramsay

Vishal Ratti

Harbir Singh

Rachel Solomon

Terrence Sullivan

Rami Thabet

Cynthia Trynor

Joanne Walker

Vickie Welch

Denise Zarn

## Publisher

W. Anton Hart

E-mail: ahart@longwoods.com

## Editorial Director

Dianne Foster-Kent

E-mail: dkent@longwoods.com

## Managing Editor

Rebecca Hart

E-mail: rhart@longwoods.com

Managing Editor

Ania Bogacka

E-mail: abogacka@longwoods.com

## Web Editor

Christina Hale

E-mail: chale@longwoods.com

## Web Technician

Adam Marien

E-mail: amarien@longwoods.com

## Copy Editors

Susan Harrison and Tina Dealwis

## Associate Publisher/Administration

Barbara Marshall

E-mail: bmarshall@longwoods.com

## Associate Publisher/Media

Susan Hale

E-mail: shale@longwoods.com

## Associate Publisher/Services

Matthew Hart

E-mail: mhart@longwoods.com

## Director, Design and Production

Yvonne Koo

E-mail: ykoo@longwoods.com

## Graphic Designer, Design and Production

Jonathan Whitehead

E-mail: jwhitehead@longwoods.com

## Graphic Designer, Design and Production

Dzeneta Zunic

E-mail: dzunic@longwoods.com

## Illustrator

Eric Hart

E-mail: ehart@longwoods.com

## Sponsors

Accenture Canada, Adastral Group, Canada Health Infoway, Canadian Institute of Health Information (CIHI), Courtyard Group, Initiate Systems, Microsoft Canada, xwave - a Division of Bell Aliant

No liability for this journal's content shall be incurred by Longwoods Publishing Corporation, the editors, the editorial advisory board or any contributors. ISSN No. 1710-2774

Publications Mail Agreement No. 40069375

Printed by Harmony Printing

© May 2009

Cover Photo: Phototake/The Canadian Press



Longwoods Publishing  
Enabling Excellence

# Acknowledgements

Numerous individuals have contributed to the success of the Wait Time Information System and all deserve thanks and recognition.

Along with all contributors and advisors to this issue we are grateful for the support and contributions of the following:

Melissa Farrell, Ken Deane and their teams at the  
Ministry of Health and Long-Term Care

The WTIS-EMPI Steering Committee and Access to Care Expert Panel  
for their valued direction and support

The Wait Time Clinical Expert Panels and Chairs for their guidance  
and efforts on behalf of their clinical colleagues

The Data Certification Council, Measurement and Reporting Committee,  
Access to Care Reporting Working Group, and Access to Care Data Quality  
Working Group for helping to ensure data quality and integrity in the wait  
time reporting process

The many employees of Cancer Care Ontario, with special thanks to the  
Executive Team (past and present) for their leadership and support throughout  
the project, the Chief Information Officer Portfolio and Wait Time Information  
Program, for their tireless work in deploying and evolving Ontario's Wait Time  
Information System.

# The Times They Are A-Changing: What Worked and What We Learned in Deploying Ontario's Wait Time Information System

Hugh MacLeod, Alan Hudson, Sarah Kramer and Murray Martin

## Introduction

How many days would you be comfortable waiting if you needed cancer surgery? What would you do if someone, not as medically urgent, was able to receive an MRI or CT scan before you? Would you want to know if you could wait less time for treatment at another location or with another clinician? These are some of the dilemmas facing patients and our health system when dealing with the issue of wait times.

To address these pressing concerns, in the fall of 2004, Ontario launched its Wait Time Strategy. Two years later, Collins-Nakai et al. (2006) reported that Ontario had moved “from being a laggard to a leader” with respect to wait times. This article summarizes Ontario's work to date to improve access to care, including reviewing the need, action taken and the emerging results. Much can be learned and leveraged from the experiences described in this article and throughout this issue. They can serve as an important starting point for further discussion, improvement and action, for initiatives big and small, by all types of organizations and jurisdictions.

## The Need

Wait times have long been top of mind for Canadians. We want to know that if and when we or our loved ones need care, it will be there. Canadians are increasingly anxious about growing wait lists, because we know that waiting too long for treatment can

have negative consequences on our recovery and long-term health. While some waiting is unavoidable, such as the time required to confirm a diagnosis, overly lengthy waits can lead to deterioration of health, and in turn, increase demand for services in an already seemingly unsustainable healthcare system.

Under mounting public pressure, wait times rose to the top of the country's agenda in the fall of 2004 when the first ministers made access to quality care their first priority. Together, they agreed to focus on better management of wait times and on reducing waits that are longer than what is medically acceptable. Some retrospective statistics, such as the Fraser Institute's annual waiting list data (Walker et al. 2008), were available and a number of jurisdictions had already initiated steps to address wait times. The first ministers agreed to build on these efforts and committed to achieve meaningful reductions in wait times in five areas: cancer, cardiac, diagnostic imaging, joint replacements and sight restoration by March 31, 2007.

A reduction in wait times would not only lessen anxiety for Canadians, it could also alleviate pressure in other parts of the health system, which helps make the case for provin-



cial commitments and initiatives to address the issue. But while the desire and support to improve wait times no doubt existed, significant challenges lay in finding solutions that could lead to transformational improvements and that could be sustained to address the complexities in providing timely access to care. Real transformational change would require a literal “opening and emptying” to create the space for new solutions to emerge. This meant being able to step outside of the comfort zones that had a grip on our healthcare system, and separate from processes and patterns that were no longer useful to a system that was being compelled to evolve.

### **Wait Times in Ontario**

Prior to 2004, Ontario was falling significantly behind in addressing the issue of access to care. Clinicians were managing patient wait lists on paper, in their own offices, without provincial or clinical standards, as these had yet to be established. Most hospitals were unaware of who was waiting for which service. System managers had no tangible data to identify provincial or regional trends and issues and, therefore, no means to incite improved performance. The provincial government had no objective insight into one of the most pressing public issues of the day. And the public had no reliable information to hold their government accountable for improvements.

In September 2004, with support from Premier Dalton McGuinty and the former Minister for Health and Long-Term Care, George Smitherman, the then Associate Deputy Minister for Health and Long-Term Care, Hugh MacLeod, led Ontario on an ambitious healthcare transformation agenda. The focus on improving access to care became an important component of a broad portfolio of initiatives to transform the province's health system. A Lead for Access to Services and Wait Times was quickly found in Dr. Alan Hudson and shortly thereafter, in November 2004, Ontario's Wait Time Strategy (hereafter “the strategy”) was launched (Trypuc et al., 2006b).

The strategy initially focused on the time between a specialist's and patient's decision to treat, and the actual provision of treatment (referred to as Wait 2). Ontario's aim was to improve access to healthcare services by reducing wait times in five areas – cancer surgery, cardiac procedures, cataract surgery, hip and knee replacement surgery, and CT and MRI scans – by December 2006.

Early on, the wait time issue was seen as an information problem. Saulnier et al. (2004) and Webster (2004) reported that the view into wait time information was based on survey data that was inconsistent in most areas of care and not comparable across jurisdictions. There was a lack of reliable and timely information on which decisions around how to improve access to care could be made. This is where information management and information technology (IM/IT) would be able to play a critical role.

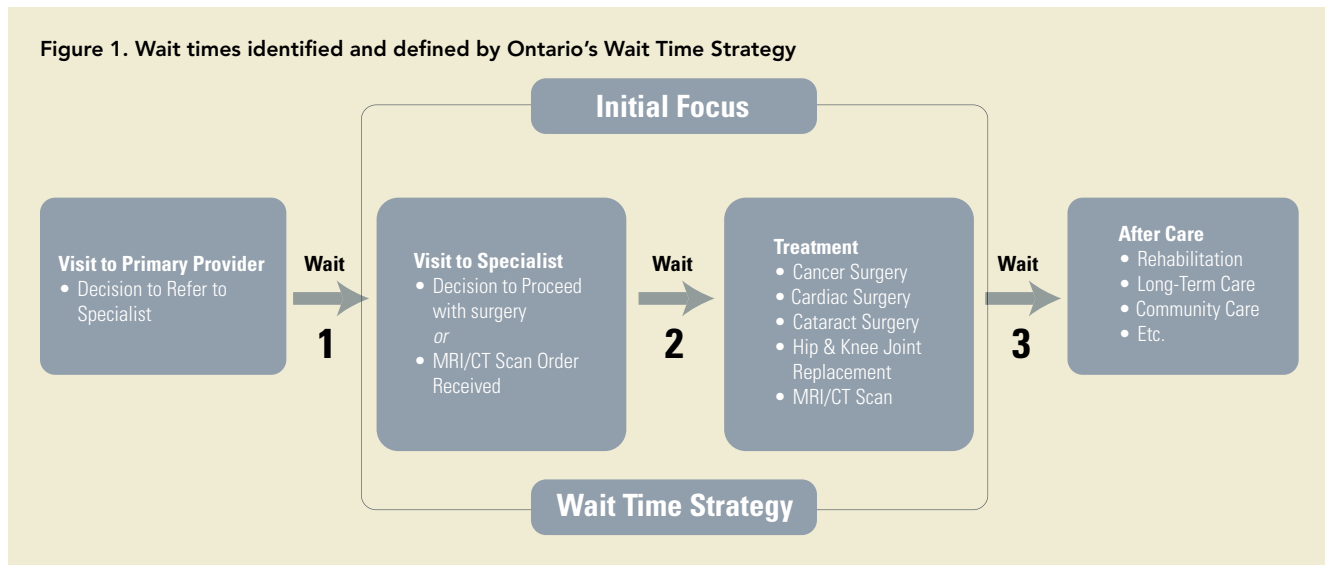
A solid IM/IT solution was viewed as fundamental to the success of the strategy, underpinning the way in which wait time data would be collected and reported. While Ontario began manually collecting wait time data using an interim tool, it committed to putting the necessary processes and systems in place to electronically capture and report on wait times and set the ambitious target to provide near real-time data to the public by June 2007.

As planner and manager of the provincial cancer system, Cancer Care Ontario (CCO) had significant experience in provincial implementations. It was also authorized to provide information services to healthcare providers and to electronically share information. In addition, through its regional vice-presidents and cancer networks, the organization had well-established relationships with healthcare providers and strong stakeholder engagement and management skills. With this background, the MOHLTC appointed CCO's then Chief Information Officer, Sarah Kramer, to lead the development and execution of a Wait Time Information Strategy for the province. (Read more about CCO's role in leading the Wait Time Information Strategy in “Waiting for the Referee or Refereeing the Wait: CCO's Role in Hosting and Deploying the Wait Time Information System in Ontario” on page 20. Details on the Wait Time Information Strategy can be found in “Developing an Effective IM/IT Strategy” on page 16.)

The Wait Time Information Strategy was developed in four months, and less than two years later, the Wait Time Information System (WTIS) had been deployed and was being used in hospitals across the province. Based on this initial success, CCO's mandate was extended to expand the WTIS to capture procedures across all adult and pediatric surgical areas. As of March 2009, 86 hospitals were using the system, with data being captured by 3,300+ clinicians for more than 2.2 million surgical procedures and MRI/CT scans. The system is continuing to grow to include more of the continuum of care (see Figure 1). Functionality has already been piloted to capture the wait from the date a physician refers a patient to a specialist to the date the specialist and patient decide to proceed with surgery or an MRI/CT scan order is received (referred to as Wait 1). Under the province's Emergency Room/Alternate Level of Care (ALC) strategy, the WTIS is also being leveraged to measure the wait from the date someone in an acute care facility is designated to an ALC to the date of their discharge to an ALC (referred to as Wait 3).

### **The WTIS Challenge**

While benefiting from the learnings of other wait time initiatives such as Ontario's Cardiac Care Network and Saskatchewan's Surgical Care Network, the development and deployment of the WTIS was a massive undertaking without precedence in the province of Ontario. (For additional information on



Saskatchewan's Surgical Care Network, see Glynn et al. 2002, 2003.) To get started, the Wait Time Information Strategy Lead assembled a team of leaders with proven delivery and change management experience. This leadership team, along with resources from CCO and vendors, whose services were procured through competitive bidding processes, formed the WTIS project team. Together, they worked with hospitals and clinicians across the province to achieve the Wait Time Information Strategy's ambitious goals.

The main challenges in developing and deploying the WTIS were no different than other complex and broad information initiatives: time, scope and complexity. As a single electronic provincial system, the WTIS needed to be linked to all hospitals participating in the strategy. The application also needed to be available online so that the thousands of participating clinicians could access the system directly, thereby increasing the accuracy and timeliness of wait time data. And once entered, wait time data needed to be available at multiple levels and publicly reported to ensure transparency and accessibility for patients and providers. All of this needed to be completed so that 100% of procedures in the initial five priority areas of the province's strategy could be captured and reported in near real-time by the ambitious June 2007 target date.

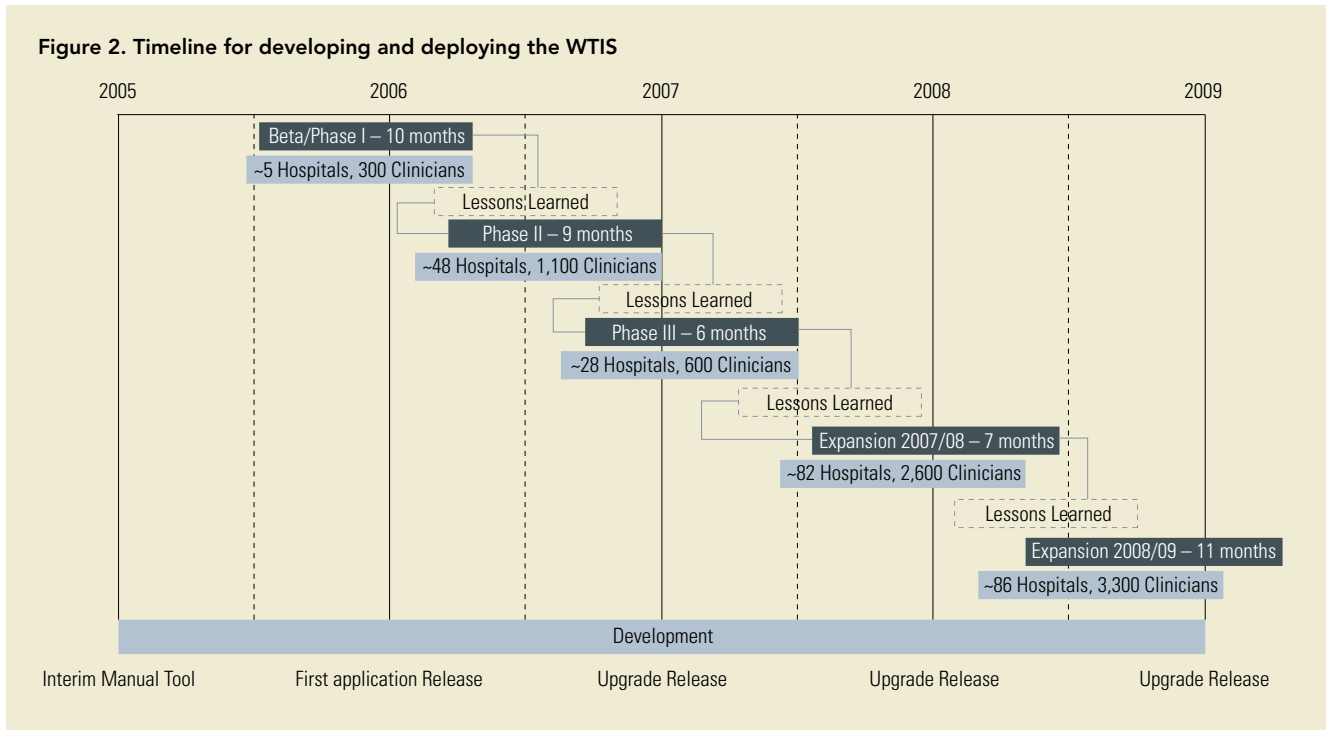
In addition to the original project scope, as the WTIS was developed, the need for a repository of patient demographic information was identified. As a result, CCO was tasked with deploying a second province-wide system, Ontario's Client Registry/Enterprise Master Patient Index (EMPI), which would store and link patient information. Under an aggressive timeline (see Figure 2), the deployment schedule for the WTIS and Client Registry/EMPI was viewed by some e-Health leaders as unattainable. The WTIS project team, however, saw this as an

opportunity to deploy a critical component of Ontario's infrastructure: the Client Registry/EMPI would be a cornerstone of the future electronic health record and the WTIS would be the first clinical application to use it.

The two systems were deployed concurrently and allowed hospitals to collect and report on wait time information in an accurate and timely manner. Following successful deployment, the WTIS was then expanded to capture all adult and pediatric surgical procedures, and Ontario's Client Registry/EMPI was available to be leveraged for and linked to other provincial initiatives.

Adding to the complexity for the WTIS was that the initiative was being deployed in the midst of the introduction of a new regional health delivery model in Ontario. The province was the most recent to establish such a model, in the form of Local Health Integration Networks (LHINs). As not-for-profit organizations governed by boards of directors, the main role of the LHINs would be to plan, fund and integrate health-care services on a regional basis. These services could include hospitals, community care access centres, community support services, long-term care, mental health and addiction services and community health centres. LHINs were still establishing their specific mandates as a wide range of projects, including the WTIS, were initiated. Consequently, the WTIS project found itself competing for priority with its stakeholders at the hospitals, LHIN and provincial levels.

Having witnessed a history of mixed e-Health success in the province, many healthcare providers were skeptical of government projects and promises. Ontario had few provincial IM/IT projects to learn from and, as such, providers were uncertain about the WTIS' effectiveness and longevity. Funding and resourcing for the provincial program were also of particular concern for

**Figure 2. Timeline for developing and deploying the WTIS**

hospitals, which were under increasing financial pressure. In addition, some hospitals had already initiated plans for, or had in place, independent systems to monitor wait times.

### The Action Taken

Transformational change required everyone to come on board to work towards a common vision with new shared values. This would take both courage and discipline: Courage to move out of the past “mindset and behaviour circle” that had become a comfort zone for the healthcare system – the very comfort zone that led to the system becoming complacent and cynical about transformation; and discipline to maintain focus on the shared vision, to resist knee jerk reactions and to stay the course.

### Creating a Self-Organizing Process

If momentum and engagement in a far-reaching and comprehensive transformation initiative is to be generated, policy, strategy and execution often need to run in parallel. Recognizing this, the Access to Services and Wait Times Lead decided to forego the traditional route of waiting for all program policies and strategies to be developed, and instead got the initiative off the ground quickly by leveraging and capitalizing on the existing public pressure, industry interest and government support for improving access to care.

A guiding principle in the success of the strategy was to allow strategic solutions to emerge from within the healthcare system itself. This acknowledged that the system is far too complex

for government to solve the issue of timely access to care on its own, and that the best way to execute the strategy would be to have the province provide leadership and support while giving local and regional experts the opportunity to determine a system solution.

Working with stakeholders in the MOHLTC, LHINs and hospitals, as well as partners such as Canada Health Infoway, the Canadian Institute for Health Informatics, the Institute for Clinical and Evaluative Sciences and Smart Systems for Health Agency (now part of e-Health Ontario), CCO had access to a wide range of e-Health/IM/IT experts and knowledge. The ability to secure expertise from within the e-Health industry, as well as from vendors and the private sector, played a significant role in delivering the WTIS successfully, in securing clinician engagement and in the emerging improvements in access to care.

Through this industry-led approach, government leaders could focus their attention on political challenges and alignment of strategies, with the field having the freedom, authority and accountability to come up with ideas on how to tackle the wait time issue. This allowed decisions to be made quickly and solutions to emerge from those who would be most impacted by the change.

### New Ways of Engaging and Collaborating

To understand all facets of providing access to care and to open up all possibilities for solutions, it was important to engage individuals in a different manner of thinking. Conversations

needed to revolve around broader system and process views. This ensured that decisions and actions were focused on the bigger picture, allowing individuals across the continuum of care to be brought into the discussion and work together to ultimately come up with solutions that made sense for all.

Without any previous standardized wait time data to go by, there was no way of knowing what the wait time picture would be once data started coming in through the WTIS. Still, the commitment to publicly report wait times by LHIN and hospitals demonstrated the willingness of all stakeholders to face the same facts. With WTIS reports showing unfavourable results in many areas of the system, the MOHLTC and healthcare providers quickly set out to prove that, by supporting each other, the situation could be improved. The transparency created through the public reporting process also helped establish a sense of trust among stakeholders, who began collaborating on systemic changes that would help them stay the course and realize long-term benefits.

The WTIS project also engaged “champions” at each level of the healthcare system to draw support for the program among their peers. The passion, leadership and participation of these champions helped attract those “on the fence” about the initiative and eventually fuelled momentum that would overwhelm the nay-sayers.

The use of Clinical Expert Panels was particularly important and effective in driving adoption of the program and the WTIS among clinicians. These panels represented the clinician community and included clinicians, administrators, researchers and other recognized healthcare leaders who saw the need for change (Trypuc et al., 2006c.) Through the voluntary efforts of these champions, adoption efforts began well before the system was even delivered, soliciting clinical input throughout the process as a way to involve clinicians in the project. The panels continued to evolve as the WTIS expanded to address the needs and views of the diverse clinician community.

### Generating Momentum

In building momentum for the WTIS, transparency, accountability and communications all became critical in ensuring stakeholders at all levels understood and were prepared to influence change.

The government’s commitment to publicly report wait times on its website ([www.ontariowaittimes.com](http://www.ontariowaittimes.com)) was significant in establishing transparency – between healthcare providers and the public, and between government and hospitals and clinicians. For the first time, the public and providers could compare wait times for key procedures by hospital across the province and within regions. Reporting of wait time data was another example of the courage it would take on the part of both hospitals and the government, who were willing to face the consequences of openly sharing long and widely disparate wait times.

### Hospital Accountability Agreements

An important part of Ontario’s Wait Time Strategy is the Hospital Accountability Agreement. The government puts forward funding for hospitals participating in the Wait Time Strategy. In return, hospitals are held accountable for maintaining a base volume of cases through their budgets, for performing additional cases through incremental wait time funding, and for managing the waits for *all* cases (Trypuc et al., 2006a). Hospitals implement and maintain the provincial WTIS and Client Registry/EMPI and provide wait time data through the WTIS. In increasing surgical capacity, the additional wait time cases must not negatively affect volumes in other service areas or any other hospital services. Each hospital’s performance is audited regularly, and if conditions are not met, funding is reclaimed.

Initially faced with public concern expressed through the media, hospital leaders eventually came to appreciate the introduction of the public reporting process, which now gave them the data that had been lacking to effect necessary changes. Other efforts to ensure transparency throughout the project were also made, including tools and tactics to regularly share project status with all stakeholders to help keep momentum going and head off any potential risks and problems early.

Prior to the strategy, it was unclear where the accountability rested for ensuring patients had appropriate access to care. The strategy used accountability as a catalyst for performance improvements (more details provided in “Achieving Accountability” on page 22) and put the onus on hospital boards to manage access to services in their organizations. The commitment, however, to achieve the challenging yet attainable goals set by the strategy cascaded through and was instilled at all levels of the healthcare system – from the MOHLTC to hospital CEOs and operating units, with hospital CIO’s at first and eventually LHIN e-Health Leads eventually becoming involved as part of the WTIS Project Steering Committee.

Accountability was also built into the government’s investment in the WTIS project in the form of Hospital Accountability Agreements. Hospitals were expected to meet a series of conditions to obtain funding for wait time cases, including implementing and using the WTIS. In meeting these conditions, hospitals were able to increase surgical capacity for selected services to unprecedented levels. Over time, levels of accountability grew to include factors for productivity, such as ensuring WTIS data was in near real-time by having cases entered within two business days.

The third critical component in generating momentum for the WTIS was communications. From the start of the project, communication vehicles and channels were established to provide regular updates to all stakeholders on progress being

made and challenges to come. Ongoing communications helped engage and encourage stakeholders – particularly those in the field – to share input with the project team and kept attention on the strategy and the WTIS. The communications approach is further discussed in “An Integrated Approach to Stakeholder Engagement” on page 62.

### **Gaining Traction and Delivering Early Results**

While timelines set for the WTIS project were extremely aggressive, there is no substitute for urgency as a driver for making change happen. With public commitments made by the MOHTLC, project deadlines and deliverables were firm. Sophisticated risk management techniques would be essential to keep the ambitious project on course and ensure all milestones could be met. Wait Time Strategy and WTIS project leaders were also conscious about factoring in the provincial election cycle, which increased pressure to demonstrate results before the October 2007 vote.

While self-organizing processes offer target stakeholders the advantage of shaping their own solutions, there is a risk of introducing competing demands. With multiple perspectives and needs, project teams faced with this scenario run the risk of trying to “boil the ocean.” For the WTIS project, a core set of goals had been clearly articulated at the outset. The challenge for the project team was to be extremely disciplined about staying focused on these priorities, while also responding to valuable ideas and issues that surfaced through the collaborative process among healthcare experts.

This focus enabled the project to deliver results quickly and allowed the WTIS to gain strong traction in the field. The reporting of timely wait time information, which also highlighted early signs of improvements in wait times, demonstrated “quick wins” and caught the attention of cautious and resistant stakeholders. The project team had also established a strong process for managing change requests and identifying risks early that allowed the team to quickly course correct. This ensured the project did not lose valuable momentum and proved the responsiveness of the project and system to stakeholders.

Quick wins began with Beta/Phase I of the WTIS project, where deployment was tested in five hospitals. The Beta/Phase I experience proved extremely valuable in pointing out areas where improvements needed to be made to ensure subsequent phases ran smoother. Importantly, it also demonstrated that the ambitious project goals were indeed achievable, helped create new champions for the system, and highlighted the critical need for a cohesive programmatic approach to deployment (further explained in “Taking it to the Streets: Delivering on Deployment” on page 30).

### **The Emerging Results**

In a short period of time, change is evident on a number of

fronts. First and foremost, wait times in Ontario are decreasing with results in the initial five areas of care, showing that patients are receiving treatment faster.

- Not only are wait times down in these areas, but the number of surgeries and MRI/CT scans being performed are up. Hospitals have been able to use the wait time information that is now available to find efficiencies to get more people treated. LHINs and the MOHLTC have also been able to use the information to make better decisions around resource allocation and system planning.

Analysis of wait time data (from August/September 2005 to February 2009) shows that Ontarians waited less time between the decision to treat and the actual treatment using the 90th percentile as the measure of wait time (i.e., the point at which 90% of patients received their treatment). More importantly, wait times are also moving closer to the provincial access targets developed by the Clinical Expert Panels. Figure 3 shows the impact to procedures, using fiscal 2003–2004 as the baseline year.

Second, the strategy and its application to the WTIS have provided data that allow the system to focus on accountability and performance, which has begun to change the way healthcare is being delivered.

- All clinicians participating in the strategy are using the same standards to assess how quickly a patient should receive treatment for an MRI/CT scan. With a consistent methodology, clinicians across the province – in urban and rural communities – are guided to prioritize patients in the same way, supporting equal access to care.
- One province-wide system is now being used to capture wait time data electronically from all clinician offices. As of March 2009 the WTIS is capturing wait time data from 86 hospitals, and is being used by more than 3,300 clinicians to capture more than 2.2 million procedures. The WTIS has enabled consistent reporting of wait time data so that direct comparisons can be made and benchmarks set. The Ontario government has already used the data to set wait time guarantees, beginning with cataract surgery in 2009, which will ensure patients have access to this procedure within the 26-week access target.
- With few exceptions, all hospitals are meeting the terms of their accountability agreements. Based on regular audits, hospitals are maintaining the base number of procedures, performing additional funded volumes, submitting required wait time information to the WTIS and meeting efficiency conditions.
- Public reporting of wait time data through the province’s website makes it easy to identify the hospitals and LHINs with the shortest and the longest wait times in all service areas.

**Figure 3. The WTIS impact on the number of procedures performed and the change in wait times for procedures**

Procedure	Impact on # of Procedures Performed	Impact on Procedure Wait Time (Aug/Sept 2005 – Feb 2009)	Meeting Access Target
Cancer Surgery	13% increase	22.2% decrease (18 days less)	Meeting 84-day target
Cardiac Procedures	35% increase	15.9% increase (8 days more)	Meeting 182-day target
Cataract Surgery	32% increase	65.6% decrease (204 days less)	Meeting 182-day target
Hip and Knee Replacement Surgery	51% increase	56.4% decrease (198 days less) in hip replacement wait times	Hip replacement surgery meeting the 182-day target
		58.2% decrease (256 days less) in knee replacement wait times	Trends indicate that the 182-day target for knee replacement will be met in the near future
CT and MRI scans	12% increase for CT scans	56.8% decrease (14 days less) in CT scan wait times	CT and MRI scans are not yet meeting the 28-day target
	87% increase for MRI scans	11.7% decrease (46 days less) in MRI scan wait times	

CT = computed tomography; MRI = magnetic resonance imaging

While there is still work to do to raise awareness of this information and its use, its availability means that Ontarians are now empowered to engage in discussions with their providers about choosing where to get care (Trypuc et al., 2007).

- Public interest in Ontario’s wait time information appears to be high. From the time the provincial wait times website was launched in October 2005, to February 2009, the website has had approximately 10 million hits and receives an average of 8,000+ hits a day.
- While it is still early to measure objectively or quantitatively, all indications and anecdotal evidence suggest that wait time data is being used to increase efficiency and effectiveness of clinical practices.

Prior to the WTIS, reliable wait time data were largely unavailable. Where they did exist, they were captured using manual and time-consuming processes. The WTIS enables clinicians and their office staff to capture data electronically through one system, saving time, increasing accuracy of data and allowing active management of wait lists. In addition, with near real-time data, hospitals and clinicians can ensure patients with the highest priority are cared for first. Today, 100% of wait time funded cases are being captured in the WTIS.

- Anecdotal information also suggests that data are being used for performance management, resource allocation and planning within the healthcare system. For example, some hospitals have begun to block periods of OR time to

get through wait lists for specific procedures. Others are reviewing wait time information with their patients so that they can decide how to best proceed with treatment.

Third, the deployment of the WTIS is influencing the way other healthcare information initiatives are designed and executed.

- The WTIS experience has benefited several other provincial measuring and reporting systems by demonstrating what can be delivered and achieved through IM/IT. The Critical Care Information System, Emergency Department Reporting System, Surgical Efficiency Targets Program and Peri-Operative Improvement Expert Coaching Teams have leveraged the strategic and tactical IM/IT approaches used for the WTIS to quickly secure support to develop and deploy their initiatives (MOHLTC 2009).
- Through the WTIS project, more than 500 clinician offices across the province were set up with new Internet connections. With more clinicians now connected, hospitals and LHINs have been able to leverage this access for other IM/IT initiatives aimed at improving clinical practice.
- The WTIS project has established a strong methodology for provincial IM/IT programs. The project’s infrastructure for governance, performance management, stakeholder management and execution are being leveraged for other deployments. Programs such as Colon Cancer Check are also applying lessons learned through the WTIS approach in the execution of their provincial IM/IT initiatives.

- In the WTIS project, two provincial systems were concurrently implemented to track wait times and retrieve and link patient demographic information. (See details on the development of the WTIS in “Building a Sustainable System: The Making of the WTIS” on page 43.) Together, the two systems gave Ontario the unique ability to collect data in near real-time, directly from clinicians’ offices. As the WTIS expands, it will provide more Ontarians with better access to care.

## Conclusion

For the first time in Ontario, wait time data and the improvements they support are transparent to patients, clinicians and healthcare planners. The accessibility, standardization and public reporting of this data has created the accountability among healthcare providers to reduce waits and improve access to care. (Performance management as a result of the WTIS is discussed in “Turning Data into Meaningful Information” on page 73.) For patients, public wait time information empowers them to be more active in managing their own care. For clinicians, manual processes are reduced and better data means they can now make the case for increased capacity to manage wait lists more effectively. For hospitals and health system planners, better information and analysis allows better decisions to be made around managing operating room times and resource allocation to reduce waits. And for the public, better information provides the means to hold decision-makers accountable for improving access to care.

While there are many lessons to be learned from the WTIS experience, transformation success cannot be reproduced by using a recipe-book approach. Transformation is based on attitude, understanding and behaviour. It requires a common vision, shared values, and the discipline and courage of everyone to separate from old patterns and processes and create new ones. Through the use of industry champions and other strategies described here, the WTIS project was able to engage stakeholders in a new conversation and move them and the government out of comfort zones. In the end, real transformation requires everyone to be on board with a sense of pride in doing the right thing, a clarity of purpose, alignment of effort, credibility of leadership and a clear accountability for performance.

## Acknowledgements

Thanks are extended to Ryan Kalladeen and Melissa Farrell, Ministry of Health and Long-Term Care and the ATC Informatics team at Cancer Care Ontario for providing the Wait Time Information System statistics.

## References

Collins-Nakai, R., O. Adams and M. Saulnier. 2006. “A Prescription for Ontario’s Wait Time Strategy.” *HealthcarePapers* 7(1): 46-50.

Walker, M., N. Esmail and M. Hazel. 2008. *Waiting Your Turn: Hospital Waiting Lists in Canada – 18th Edition*. Calgary, AB: Fraser Institute. Retrieved November 10, 2008. <<http://www.fraserinstitute.org/researchandpublications/publications/6240.aspx>>.

Glynn, P.A.R. 2002. “Creating a Surgical Wait List Management Strategy for Saskatchewan.” *Hospital Quarterly* 5(3): 42-44

Glynn, P.A.R., L.M. Donnelly, D.A. Calder and J.C. Brown. 2003. “The Saskatchewan Surgical Care Network: Toward Timely and Appropriate Access.” *Hospital Quarterly* 7 (1): 44-48.

Ministry of Health and Long-Term Care (MOHLTC). 2009. Performance Improvement Initiatives. Retrieved October 22, 2008. <[http://www.health.gov.on.ca/transformation/wait\\_times/providers/wt\\_improv\\_mn.html#surge\\_target](http://www.health.gov.on.ca/transformation/wait_times/providers/wt_improv_mn.html#surge_target)>.

Saulnier M., A. Shortt and E. Gruenewoldt. 2004. *The Taming of the Queue: Taking Stock of Canadian Developments in Wait Time Measurement, Monitoring and Management*. Ottawa: Canadian Medical Association. Discussion Paper.

Trypuc J., H. MacLeod and A. Hudson. 2006a. “Developing a Culture to Sustain Ontario’s Wait Time Strategy.” *HealthcarePapers* 7(1): 8–24.

Trypuc J., H. MacLeod and A. Hudson. 2006b. “Ontario’s Wait Time Strategy: Part 1.” *Healthcare Quarterly* 9(2): 44–51.

Trypuc J., H. MacLeod and A. Hudson. 2006c. “Expert Panels and Ontario’s Wait Time Strategy: Part 2.” *Healthcare Quarterly* 9(3): 43–49.

Trypuc J., H. MacLeod and A. Hudson. 2007. “Evaluating Outcomes: Ontario’s Wait Time Strategy: Part 4.” *Healthcare Quarterly* 10(2): 56–65.

Webster G. 2004. “Towards Standardized Definitions of Wait Times and Measurements Considerations. Presentation Materials.” Retrieved September 12, 2008. <[www.cprn.org](http://www.cprn.org)>.

## About the Authors

**Hugh MacLeod**, MA, is the Associate Deputy Ministry to the Premier, Climate Change Secretariat. He was previously the Assistant Deputy Minister for Health System Accountability and Performance at the Ministry of Health and Long-Term Care and has had considerable senior-level experience in the health sector in Ontario and British Columbia.

**Alan Hudson**, OC, MB is the Board Chair of eHealth Ontario and the Lead of Access to Services and Wait Times for the Ontario Ministry of Health and Long-Term Care. A neurosurgeon by training, Dr. Hudson is the former President and CEO of Toronto’s University Health Network and Cancer Care Ontario.

**Sarah Kramer** is President and CEO of eHealth Ontario. Previously Sarah served as the Vice-President and Chief Information Officer with Cancer Care Ontario, as well as the Lead for the Ontario’s Wait Time Information Management Strategy.

**Murray Martin** is President and CEO of Hamilton Health Sciences. As Co-Chair of the OHA Wait Times Advisory Committee Murray played a critical role in guiding the development of the Wait Time Strategy and WTIS project.

# Developing an Effective IM/IT Strategy

Sarah Kramer, Joanne Walker and Will Falk

## Introduction

Healthcare organizations and systems around the world lag far behind banking, manufacturing, travel and other industries in their use of information management/information technology (IM/IT) to deliver high-quality products and services. Across Canada, healthcare organizations, as well as governments, understand that information and information technology are needed to deliver quality care and to sustain our publicly funded health system. However, insufficient funding, few experienced resources, lack of strong leadership and absence of clear business/clinical rationale have restricted innovation and advancement in the use of IM/IT to improve healthcare delivery and patient outcomes.

## Ontario's Wait Time Information Strategy

Ontario, in particular, has struggled in its attempts to implement IM/IT strategies on a wide scale. Its large size (12.5 million people), diverse geography and complex health system (155 independently operated hospitals, 20,000 physicians and 14 Local Health Integration Networks [LHINs] overseeing, but not managing, the delivery of care) create an especially challenging environment in which to execute province-wide IM/IT strategies effectively. The Wait Time Information Strategy, developed between January and March of 2005 to support the Ontario government's commitment to reduce wait times for selected healthcare procedures, is an example of a province-wide IM/IT strategy that has dramatically improved health outcomes.

... **insufficient funding**, few experienced resources, lack of strong leadership and absence of clear business/clinical rationale have restricted innovation and advancement in the use of IM/IT to improve healthcare delivery and patient outcomes.

## Success Factors

A number of key factors led to the success of Ontario's Wait Time Information Strategy, and can be effectively applied toward the development of other multi-stakeholder IM/IT initiatives in healthcare. These success factors include:

- Political focus and commitment
- A clear business/clinical imperative driving the investment in IM/IT
- Strong leadership and a single point of accountability for swift decision-making
- Input from the best and brightest
- Grassroots clinical involvement
- Clear articulation and management of scope
- Riding the wave of investment

Each factor is described in the following sections.

### Political Focus and Commitment

In November 2004, Ontario Premier Dalton McGuinty made a commitment to the public to reduce wait times in five key services areas by December 2006. This political commitment to address a significant problem for Ontarians – long waiting

**Any massive undertaking requires strong leadership, particularly in healthcare, where the use of IM and IT is not yet mature.**

lists for surgery and diagnostic imaging – coupled with a hard deadline, drove the importance, urgency and timelines for developing and implementing an IM/IT strategy. In addition, politicians fully understood the necessity of having reliable information and information technology to achieve the desired results. The former Minister of Health, George Smitherman, articulated this when he said, “Prior to our wait times initiative we had no information to track how many procedures were being performed in Ontario’s hospitals, and no way of knowing how long people were waiting.”

The importance of the Wait Time Information Strategy was clearly recognized and reinforced by political, bureaucratic and project leaders throughout its development and execution. This was demonstrated in quarterly meetings the Premier and Minister of Health and Long-Term Care allocated to receive progress updates on the strategy. The near real-time data collected, even in the early days, enabled the government to make more informed decisions to further improve access to care, thereby fulfilling their commitment to the citizens of Ontario.

### A Clear Business/Clinical Imperative Driving the Investment in IM/IT

IM/IT investments can only be successful if they address clearly identified business problems. The underlying business imperative for any healthcare IM/IT strategy must relate directly to improvements in care and outcomes for patients. It takes significant upfront effort to pinpoint the core problem, recognize the roadblocks standing in the way of making change, and clearly articulate the desired results. Ensuring these are well understood is fundamental to the development of an effective IM/IT strategy.

The business imperative driving the Wait Time Information Strategy was the excessively long wait times for services in the province, which were preventing Ontarians from getting the timely and quality care they needed. This issue was widely recognized and a growing concern across the healthcare system and for the citizens of Ontario. The mandate for the IM/IT strategy, therefore, was to determine how technology and information could support the reduction of wait times and contribute to better management of patient wait lists, the monitoring of

wait times and the identification of improvement areas. Some of the roadblocks that were causing long waits included a lack of transparency in clinicians’ wait lists, not knowing who held the information or what it would take to share data. More specifically, the Wait Time Information Strategy needed to help fulfill the following critical components of the government’s overall Wait Time Strategy.

- a “pay for performance” model linking funding for participating hospitals to the number of procedures performed and thereby increasing system capacity;
- building on the accountability of hospital boards and management for managing access to care;
- the development of consistent standards (access targets and priority assessments) for care, regardless of patient geography;
- putting wait time information in the hands of patients and empowering them to manage their own care; and
- demonstrating accountability to the public and providers through regular and open reporting of results.

Each of these goals were ultimately achieved through the implementation of the Wait Time Information Strategy and collection of reliable and standardized wait time information.

### Strong Leadership and a Single Point of Accountability for Swift Decision-Making

Any massive undertaking requires strong leadership and a clear point of accountability. This is particularly true in the healthcare industry, where the use of IM/IT is not yet fully mature. The Wait Time Information Strategy would impact a wide spectrum of stakeholders – business, clinical and consumer – throughout healthcare, making accountability and leadership vital. Effective leaders set a clear and simple vision and articulate why it was important to achieve by focusing on implications and benefits to all stakeholders. Strong leadership also includes open and regular communication with stakeholders to ensure they understand what you are going to deliver, when you will deliver it and how progress will be measured, creating a level of transparency and engagement in the initiative.

The success or failure of the Wait Time Information Strategy rested squarely with, then CIO of CCO, Sarah Kramer, who was appointed as the Lead. As the single point of accountability, the Lead was able to make rapid decisions backed by the robust strategy to drive the initiative forward. The Lead also applied a framework for communicating these decisions and their outcomes to the project team and relevant stakeholders. This transparency ensured that all parties were always “in the know” and held them to budget, timeline and scope commitments. The Lead made it a priority to address stakeholder feedback in a timely and open manner so that momentum and engagement

was maintained throughout implementation. By demonstrating strong leadership in these critical areas and at critical times, the Wait Time Information Strategy Lead was able to sustain ongoing support for the initiative and create a strong sense of collaboration through the process.

### **Input from the Best and the Brightest**

To develop an effective IM/IT strategy, input, ideas and support need to be solicited from many stakeholders and experts from different specialty areas. This requires *real* engagement of all participants, with two-way dialogue, not just lip service. It requires a willingness to seek advice from many, but still be able

**As well as strong leadership, a single point of accountability for implementation is essential. For the Wait Time Information Strategy success (or failure) of the information strategy was the responsibility of the Lead.**

to make firm decisions, understand the consequences of those decisions, be prepared for criticism and remain open to (not afraid of) criticism and feedback.

For the Wait Time Information Strategy, advice was sought from a variety of thought leaders, technology experts, information experts, healthcare leaders and clinical experts. These stakeholders were consulted early and often to gather information, inform recommendations, define business and data requirements, and start to build the support network for executing and implementing the chosen strategy. Decisions were always made with the input of all stakeholders and communicated to all, even if a consensus could not always be achieved.

The establishment of the WTIS Steering Committee in January 2005 was a driving factor in the success of the strategy. Composed of health IM/IT leaders, hospital administrators and clinician representatives, healthcare organizations, government and eventually LHINs, the panel's role was to advise the Wait Time Information Strategy Lead on the development and implementation of the strategy, and to share responsibility for championing it and engaging healthcare workers in the field.

This strategy development team worked with other health system partners such as the Institute for Clinical Evaluative Studies, the Canadian Institute for Health Information, the Ontario Hospital Association and individual hospitals to ensure that the information strategy appropriately addressed business and clinical requirements, including data standardization and data quality. The involvement of these third-party organizations also provided a channel for the team to hear about the impact

of the strategy on other areas of the health system.

Finally, experiences of other jurisdictions that have instituted wait time strategies (e.g., the Saskatchewan Surgical Care Network, British Columbia Provincial Surgical Services Project, the Western Canada Waiting List Project and the UK National Health Service) were closely studied. The team carefully reviewed the lessons learned about standardization, implementation, governance and management from these programs, and applied them as appropriate in developing and implementing the Wait Time Information Strategy.

### **Grassroots Clinical Involvement**

A key element of Ontario's Wait Time Strategy was the concerted use of Clinical Expert Panels to guide the efforts to reduce wait times and improve access to care. Panels were established for each of the five initial service areas – cancer surgery, cardiac procedures, cataract surgery, hip and knee replacement and CT and MRI scans – with a mandate of providing expert advice and recommendations on policy and regulatory changes, building system capacity, optimizing efficiencies in the system and information technology requirements.

Each of the Clinical Expert Panels flagged the importance of information to monitor wait lists, identify bottlenecks and support ongoing performance improvement efforts. They highlighted the need for standard definitions for access to care and for collecting a minimum data set on which performance could be baselined and monitored. The panels also articulated specialty-specific issues that needed to be considered and addressed. Panel members were consulted at various points during development of the Wait Time Information Strategy.

Panel chairs became important champions for the overall Wait Time Strategy, including the need for information to drive reductions in wait times. In many cases, even four years later, these chairs continue to be strong and vocal supporters of the strategy. Many other panel members and clinicians also became advocates of the program and used their leadership to garner support and drive adoption among colleagues.

Ultimately, the success of any IM/IT strategy in healthcare depends on clinical adoption. The adoption process starts during development of the strategy; therefore, it is critical to engage clinicians – the actual users – early. By doing so, the likelihood of getting clinical buy-in increases significantly. For the Wait Time Information Strategy, engaging clinicians throughout the planning and development process also brought forward more individuals who were willing to serve as clinical champions. This demonstrates that by investing in a small number of grassroots leaders early, clinician engagement and adoption can grow exponentially.

### **Clear Articulation and Management of Scope**

With many priorities within healthcare competing for resources,

it is essential to stay focused on your clearly articulated mandate and keep scope manageable. Through the requirements gathering process and development of the Wait Time Information Strategy, there were numerous problems identified that needed to be solved. The team had to be highly disciplined in managing and balancing additions to scope to ensure original commitments and timelines were still met and results and progress could be demonstrated early – all of which proved essential to getting incremental stakeholder buy-in for implementation. Importantly, the team built the strategy in a way that left room for expanding scope as timelines and resources allowed.

In addition, the Wait Time Information Strategy team looked closely at efforts already being undertaken by some hospitals and health-related organizations to monitor wait times and provided recommendations on how to align these activities with the overall provincial strategy. Some activities were recommended to be stopped; others were continued and adjusted to coordinate with the Wait Time Information Strategy. Misaligned activities and objectives would have resulted in disjointed efforts and ineffective use of resources. The framework, direction and clarity provided through the Wait Time Information Strategy enabled all stakeholders to focus on the same goals and to support – and hold one another accountable – for achieving them.

### **Riding the Wave of Investment**

The Ministry of Health and Long-Term Care (MOHLTC) provided a key financial incentive for hospitals and clinicians to participate in the wait time program. Hospitals, which had been asking for more financial support in order to increase operating room capacity and surgical volumes, received funding from the MOHLTC. Through Hospital Accountability Agreements (for a description of these agreements, see page 22), hospitals agreed to use the Wait Time Information System (WTIS) to report wait times and ensure that incremental surgical cases would not take place at the expense of other non-priority services. Failure to meet these conditions led to recovery of the allocated funding and diminished the likelihood of these hospitals to receive subsequent wait time funding. It was imperative that action be taken in cases where accountabilities were not met.

Clinicians wanted to be able to manage their wait lists more effectively and, through the WTIS, would have the data to make the case for additional OR time so that they get more patients treated. Many, however, were skeptical of the value of the WTIS and/or already participating in one of the few local or regional initiatives trying to address the wait time issue. Wait time funding provided the important initial incentive to get clinicians engaged in the provincial program and using the WTIS.

### **Conclusion**

While large-scale IM/IT strategies are not unique in healthcare, few have been successfully executed. The rapid development and

implementation of Ontario's Wait Time Information Strategy has become a rare example of what can be achieved when the right elements are brought together. Today, as a result of the strategy, 86 hospitals and over 3,300 clinicians are using the Wait Time Information System to collect accurate and timely

**Ultimately, the success of any IM/IT strategy in healthcare depends on clinical adoption. The adoption process starts during development of the strategy, therefore it is critical to engage clinicians – the actual users – early.**

wait time data and applying it to improve access to healthcare services. The experiences of the Wait Time Information Strategy offer many valuable lessons and tactics that can be applied to other clinical areas pursuing the effective use of information and information technology to improve patient care.

### **About the Authors**

**Sarah Kramer** is President and CEO of eHealth Ontario.

Previously Sarah served as the Vice-President and Chief Information Officer with Cancer Care Ontario, as well as the Lead for the Ontario's Wait Time Information Management Strategy.

**Joanne Walker** is currently a Principal with the Courtyard Group and Acting Director of Cancer Care Ontario's Access to Care Program. Joanne led the development of Ontario's Wait Time Information Strategy and subsequently led the Beta/Phase I implementation of the WTIS and EMPI projects.

**Will Falk** is the Managing Partner of Accenture's Canadian Healthcare Practice and an Adjunct Professor at the University of Toronto's Rotman Business School. He advised the federal Minister and Prime Minister at the First Ministers' Meeting on Healthcare in 2004.

# Waiting for the Referee or Refereeing the Wait?

## CCO's Role in Hosting and Deploying the Wait Time Information System in Ontario

Terrence Sullivan

In the late 1990s, Ontario joined a number of other provinces in referring cancer patients out of the country for radiation treatment. The province and its cancer agency had failed to build sufficient capacity in anticipation of a highly predictable increase in the demand for radiation in Ontario. Public discontent with cancer services and Ontario's cancer agency in 2001 led to some dramatic strategic and operational changes in 2002/03, resulting in a revised business model for Cancer Care Ontario (CCO) (Sullivan et al. 2004). In the fall of 2003, the newly minted Cancer Quality Council of Ontario released a book based on what was known and available through information systems to drive the improvement in quality of cancer services. This volume sketched out a preliminary agenda for quality that is still being pursued today (Sullivan et al. 2003). In spring 2004, the Quality Council introduced a four-point strategy for wait time reductions, which included a focus on reducing demand for cancer services, increasing the supply of cancer resources, coordinating access to cancer services and increasing the efficiency of existing resources.

When the province selected former CCO chief Alan Hudson to lead the effort to reduce wait times, it was logical that, with its expertise and experience, CCO would be a strong and committed partner in addressing the backlog for a range of cancer services, including radiation and surgery.

As an extension of its own imperative to reduce wait times for cancer patients, CCO became the technical and logistical

home for the overall Wait Time Strategy. In addition, CCO had the systems capacity, the organizational commitment and a province-wide mandate that had already been demonstrated in other areas, including electronic pathology reporting.

CCO had also just hired a talented new Chief Information Officer (CIO) in the person of Sarah Kramer, who had the necessary ambition and competence to provide part-time support for the Wait Times program. The larger effort, under Alan Hudson's leadership, included Sarah and a team of specialty practice leaders in each of the "big five" wait time reduction candidates specified by the first ministers in 2004.

Additionally, as a consequence of the newly introduced *Personal Health Information Protection Act* (PHIPA) in Ontario, CCO was moving from what was already a secure environment for health information to an extremely high security environment for personal health data collection, use and disclosure.

In many respects, the introduction of the Wait Time Information System (WTIS) was the beginning of a journey without a clear destination for CCO and for the Ontario government. What were the boundaries of the wait times program? Who would use the data beyond public reporting and how long would this effort on wait times management endure? Would incremental wait times funding to hospitals be sustained or rebased?

Nevertheless, CCO and the wait times leadership determined that it would be best to enter this journey with a very strong organizational commitment, both in consideration

of our own strategic objective of improving access for cancer services and in the broader healthcare debate on access that was made all the more acute with the *Chaoulli* decision from the Supreme Court in June of 2005 (Flood and Sullivan 2005). The decision to support the Ontario wait times initiative with technical resources from CCO was neither simple nor taken lightly. The collection of wait time information in Ontario had been, ironically, a point of pride for CCO, which had been disclosing radiation wait times for many years. That systemic therapy wait times were not falling and that surgical wait times were growing (Simunovic et al. 2005) presented the opportunity for strategic alignment between CCO's objectives and the much broader "big five" objectives of wait time reductions for cardiac procedures, cataract surgery, cardiovascular surgery, hip and knee replacement surgery and CT and MRI scans. In short, CCO had the organizational conviction and alignment, a provincial platform, a well-developed methodology for engaging practice leaders in medicine and a new business model that fit well with the collection and use of wait time information to drive improvements in cancer services (Dobrow et al. 2008). CCO was and remains a very active silent partner, providing organizational and information infrastructure to the WTIS.

The decision for CCO to host, build and deploy a wait time information system for Ontario was somewhere between a planning decision and a decision to implement and rapidly adapt to a set of changing circumstances in the Ontario healthcare landscape, where the provincial government had committed to a significant transformation agenda. With Sarah Kramer's CIO leadership and Alan Hudson's provincial wait times leadership, we planned and adapted in bite-sized steps the introduction of the WTIS, first with the major hospitals in relation to the big five, and then in a broader implementation to capture all surgical waits across Ontario.

In the early stages, this was a difficult and challenging deployment for CCO because of the imperatives of time and the challenges and constraints of a public agency commissioning large pieces of work in short turning circles with expensive price tags. In all of this, a continuous exchange went on between the wait times leadership and CCO around the need to develop a predictable privacy-sensitive platform going forward, and the continuous make-or-buy challenges in hiring, housing and attracting an ever-movable brigade of staff talent and consulting expertise to deliver on the wait times design, deployment and operations. At the end of the day, what we have developed together is a platform for wait times information filtering, collecting and disclosure that will have a range of future information management applications and a range of important but, as yet, unexploited research applications (Sullivan 2006). We also developed, with our own cancer panels, workable priority definitions for triaging waits into acuity categories.

Going forward, with the introduction of our new e-Health

agency in Ontario, there will, of course, be questions about the eventual alignment of the WTIS and the broader "access to care" agenda; however, our current challenges remain. They are the challenges expanding the access to care agenda, as well as the newly emerging challenge of collecting and disclosing colonoscopy volumes and wait times in support of a colorectal screening program in Ontario. CCO commissions colonoscopy volumes and links the collection of data quality standards and reporting in a fashion pioneered through the WTIS for cancer surgery.

When challenged with the prospect of deploying an information system for wait times in Ontario, CCO was faced with either waiting for the provincial referee to provide an overall road map, or playing a leadership role in building, developing and refining a system. At the end of the day, we opted for the latter and we have never looked back.

The creation and consolidation of the new Ontario e-Health agency now presents exciting prospects for a future where we may be able to monitor, report and improve wait time performance in a range of areas where the citizens of Ontario rightly deserve timely access to quality care. This future will build on the strong information management tools that the WTIS has allowed us to develop together with hospital and clinical leaders across Ontario.

## References

- Dobrow, M.J., T. Sullivan and C. Sawka. 2008. "Shifting Clinical Accountability and the Pursuit of Quality: Aligning Clinical and Administrative Approaches." *Healthcare Management Forum* 21(3): 6–12.
- Flood, C.M. and T. Sullivan. 2004. "Supreme Disagreement: The Supreme Court Affirms an Empty Right." *Canadian Medical Association Journal* 173: 142–3.
- Simunovic, M., M.E. Theriault, L. Paszat, A. Coates, T. Whelan, E. Holowaty and M. Levine. 2005. "Using Administrative Databases to Measure Waiting Times for Patients Undergoing Major Cancer Surgery in Ontario, 1993–2000." *Canadian Journal of Surgery* 48(2): 137–43.
- Sullivan, T., W. Evans, H. Angus and A. Hudson. (Eds). 2003. *Strengthening the Quality of Cancer Services in Ontario*. Ottawa: Canadian Healthcare Association Press.
- Sullivan, T., M.J. Dobrow, A. Hudson and L. Thompson. 2004. "Reconstructing Cancer Services in Ontario." *HealthcarePapers* 5(1): 69–80.
- Sullivan T. 2006. "Waiting for Cancer Care: Exploiting our National Laboratory." (Guest Editorial) *Canadian Journal of Surgery* 49(1): 12–4.

## About the Author

**Terrence Sullivan**, PhD is President and Chief Executive Officer of Cancer Care Ontario. He holds faculty appointments in the Departments of Health Policy, Management and Evaluation and the Dalla Lana School of Public Health at the University of Toronto and is also Vice Chair of the Ontario Agency for Health Protection and Promotion and Chair of the Performance Committee of the Canadian Partnership Against Cancer.

# Achieving Accountability

Sarah Kramer, Rachel Solomon and Chris Dingman

## Introduction

The word and concept of “accountability” is used broadly and frequently in healthcare – often seen as the key to success change initiatives. But what accountability means and how it is applied can vary significantly. Policy-makers, managers, researchers and healthcare providers use the term in relation to everything from the quality of our relationships with and expectations of one another, to our requirements for more transparency in how resources are used, to our diagnosis of problems and remedies for improving the healthcare system (Brown et al. 2006.)

For the purposes of the Wait Time Information System (WTIS) project, achieving accountability meant responsibility for not only deploying the WTIS, but evolving the system and using its data to reduce wait times and improve access to care. Success would mean shifting from a healthcare environment where few individuals were accountable for achieving a core set of results, to an environment where multiple levels and types of individuals would be accountable for achieving a wide range of results (Trypuc et al. 2007). That meant overcoming loyalties to existing systems and convincing many skeptics that the urgency with which the WTIS would be deployed was indeed real, and that data from the system could and would be meaningful in measuring and monitoring performance.

Although accountability is highly desirable, achieving it can be somewhat elusive, as solutions need to be customized to suite all the unique individuals and organizations involved. Success

also requires overcoming the fear associated with accountability in healthcare, where who is accountable has also come to mean who will be blamed or penalized if things go wrong. (Harber and Ball 2003.)

**[It] meant overcoming loyalty to existing systems and convincing many individuals that the urgency with which the WTIS would be deployed was real, and that data from the system could and would be used to measure and monitor performance.**

With the mandate to develop and deploy the WTIS on behalf of the Ministry of Health and Long-Term Care (MOHLTC), Cancer Care Ontario (CCO) set out to change this unconstructive view and establish a culture of accountability based on support, trust and collaboration. On a philosophical level it is easy to understand the importance of providing support, building trust and establishing collaboration. On a practical level these notions can be challenging to carry out.

CCO’s approach, guided by the overall Wait Time Strategy, ensured the following were met:

- accountability was aligned at all levels;
- participants clearly understood their specific accountabilitys; and
- participants were equipped to deliver on their accountabilitys.

This article shares the approach and steps CCO took to achieve accountability for the WTIS project. The information will be of interest to healthcare policy makers, thought leaders and decision-makers working to deliver and sustain significant change within a healthcare environment.

### **Ensuring Accountability is Aligned at All Levels**

Though a provincial initiative, an important element of the WTIS project was that it was led from the field, not by government. The massive and far-reaching undertaking meant that individuals at all levels and across all parts of the healthcare system would need to work together toward the same, clearly defined goals. To ensure this program worked, a new governance model was instituted and clear lines of accountability established at varying levels.

Backed by Premier Dalton McGuinty, support was first garnered within the MOHLTC, the largest ministry in Ontario's public sector, to create one of the most streamlined governance frameworks to be used for a provincial project. Leadership and the ultimate point of accountability for the WTIS project rested with CCO under its former Chief Information Officer, Sarah Kramer, Lead of the Wait Time Information Strategy. The framework was designed in a way that would allow decisions to be made in a timely manner and consistent with the strategic goals. The Wait Time Information Strategy Lead relied heavily on the WTIS Project Steering Committee and Clinical Expert Panels to ensure decisions made both clinical and business sense.

The governance model (outlined in Figure 1) allowed the WTIS project to maintain close working relationships with each of the various stakeholder groups – clinicians, hospitals, the newly established Local Health Integration Networks (LHINs), and the MOHLTC – as well as e-Health partners such as Canada Health Infoway, the Cardiac Care Network of Ontario, Smart Systems for Health Agency (now part of e-Health Ontario), the Canadian Institute for Health Informatics and the Institute for Clinical Evaluative Sciences. By drawing on a wide range of expertise, the project team was able to resolve issues efficiently, sometimes within hours, to keep disruptions to a minimum, and to establish the WTIS as a priority healthcare project.

With the governance structure in place, clear lines of accountability were established at multiple levels of the health system (Figure 1). This underscored the immensity of the project, but also showed stakeholders that they were part of a bigger picture and established a commitment to work together to achieve the challenging yet attainable goals. Perhaps more importantly, clear

and multiple lines of accountability, culminating at an ultimate point, helped to reassure stakeholders that they would not be alone in the risks they assumed and would be supported in the efforts they undertook.

The WTIS team solicited input from across the health system at the onset of the project and throughout the initiative. This provided the opportunity for all stakeholders shaping and refining the overall strategy, as well as in the development and deployment of the WTIS. As an example, though LHINs had just been newly established and were still defining their mandates, their representation on the project's Steering Committee became

**On a philosophical level it is easy to understand the importance of providing support, building trust and establishing collaboration. On a practical level these notions can be challenging to carry out.**

a win-win situation – the project team was able to get valuable support and insight from the regions, and LHINs were able to align the requirements of the provincial initiative to regional efforts and long-term objectives. Early and regular input from stakeholders also allowed the project to benefit through a cycle of continuous improvement over its duration.

Another important component of achieving accountability was transparency of the process and of the results. The government's commitment to publicly report wait time results established expectations from the healthcare system at a provincial level and helped focus efforts to improve performance. Open reporting of wait time data meant that service comparisons could now be made across LHINs and hospitals, highlighting regional and local trends. In some cases, this transparency in reporting spurred healthy competition and a greater sense of accountability among LHINs and hospitals to drive improvements.

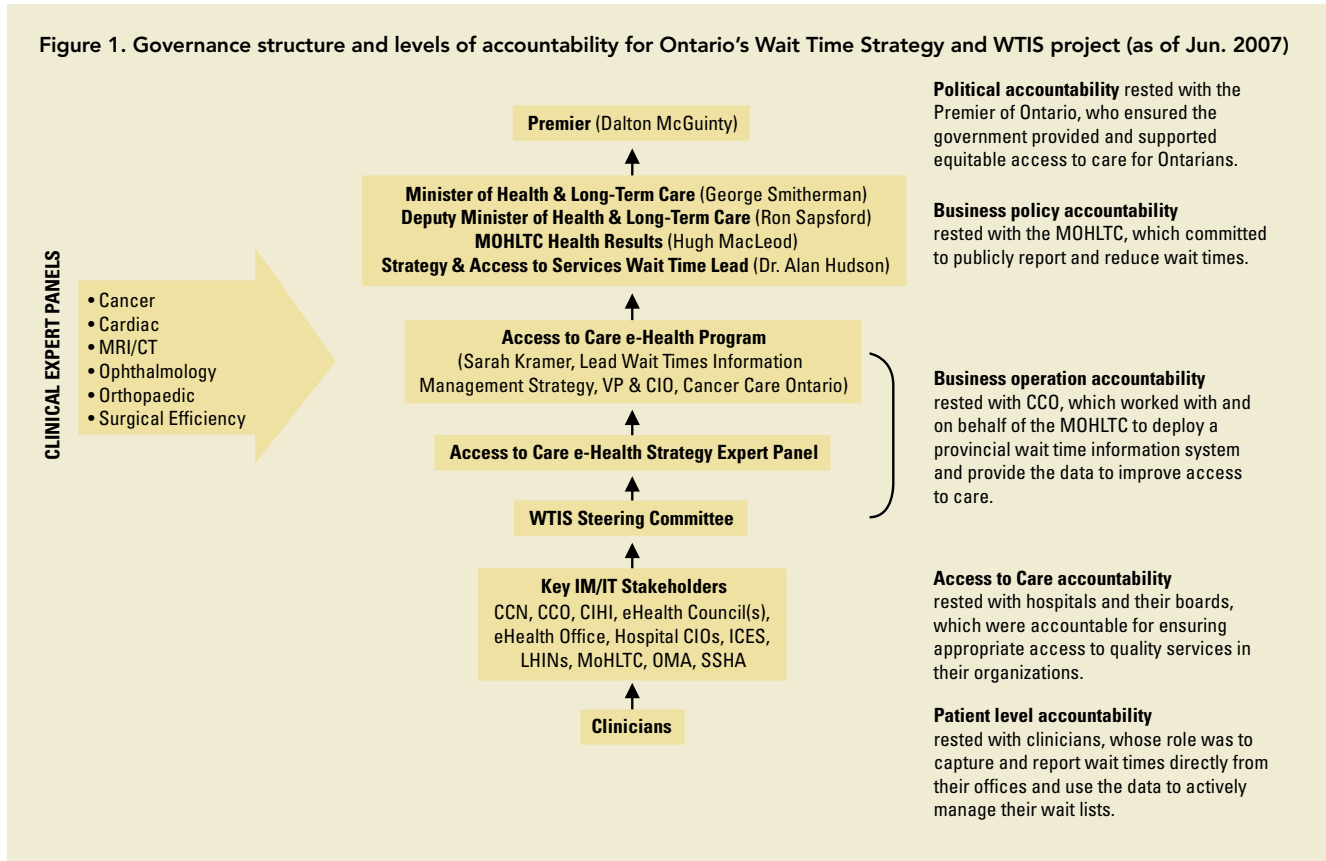
### **Making Sure Participants Understand Their Accountabilitys**

Along with a strong governance and support network, the burden of accountability should always go hand-in-hand with clear goals and objectives. Individuals and groups should know definitively what specifically they are accountable for.

By establishing a clear value proposition, the question on everyone's mind – "What's in it for me?" – was answered. It was particularly important that the value proposition be clear and repeated not only by those working on the WTIS project, but also across the strategy and the broader MOHLTC.

Under Ontario's Wait Time Strategy (Trypuc et al, 2007) objectives were clearly articulated, as was who was accountable

Figure 1. Governance structure and levels of accountability for Ontario's Wait Time Strategy and WTIS project (as of Jun. 2007)



for achieving them, and the results it was striving for. Working against notions that government strategies are often developed and rarely effectively applied, the strategy was widely disseminated, made available to the public and used guidance from industry experts to refine it along the way. The commitment was clear. The accountability to fulfill it was set.

Up until this point, it had been unclear where within the health system accountability for managing quality access to care, or specifically how long a patient waits for care, lay. The new governance model introduced for the Wait Time Strategy put this charge to the hospital CEO and board chair, making these individuals accountable for managing access and wait times in their organization (Trypuc et al., 2007). This was enforced through Hospital Accountability Agreements, which outlined accompanying requirements, including conditions for wait time funding and expectations for WTIS deployment and clinical adoption. A nested hierarchy of accountability agreements from the ministry, to the hospital CEO, to hospital operating units, instilled commitment at all levels of the industry to strive toward shared goals.

Hospital accountabilities and the accompanying processes they needed to adhere to were clearly documented. Hospitals

**On a philosophical level it is easy to understand the importance of support and trust, but on a practical level these notions can be challenging to execute.**

had access to the WTIS project team and received frequent communications, as well as opportunities to seek clarification through regular teleconference sessions. Hospital coordinators and clinical leaders working with the project team were accountable for disseminating WTIS-related information to the field. A highly orchestrated communications program ensured information was coordinated and consistent, no matter who was delivering the message, thus helping to minimize misinterpretation or misinformation while reinforcing accountability.

Through the Wait Time Strategy, the government established clear objectives and expectations for the WTIS project, beginning with a commitment to publicly report wait time data collected through the system. By posting wait time results on the provincial website, the government was also being held to account for improvements in access to care by the citizens

of Ontario. The initial objectives (outlined in Figure 2) were specific to five priority areas of care: cancer surgery, cardiac procedures, cataract surgery, hip and knee replacement surgery and MRI and CT scans.

At the execution level, deployment of the WTIS relied heavily on the efforts of hospitals, which were accountable for meeting numerous project milestones in the midst of a number of other initiatives already underway. Input from the field, channeled

time data from their offices, and do so within two business days. As relationships and work processes between hospitals and clinicians vary, significant effort was required on the part of hospitals to ensure clinicians understood and were able to fulfill their responsibilities. The WTIS project team ensured hospital teams were fully supported in anticipation of the challenges they would face in getting clinicians engaged. Along with extensive customizable communications materials, hospitals found the opportunity to draw on the advice and support of clinician champions and clinical leaders within their organization particularly helpful in helping clinicians understand the implications and anticipated benefits of the WTIS.

### Ensuring Participants Are Equipped to Deliver on their Accountability

Not only must individuals understand what is expected of them and why, they must also be willing and have the ability (resources, conditions and skills) to achieve the outcomes for which they are being held accountable.

As is the case for all successful initiatives, leadership plays a critical role in actively supporting participants as they strive to fulfill their accountabilities. Leadership support came from all levels, including the Premier, who raised the project's profile with healthcare providers and demonstrated a willingness to accept risk, proving that the government was serious about making a change. This example of leadership that "walked the talk" filtered down throughout the project structure. The Access to Services and Wait Times Lead and the Wait Time Information Strategy Lead, along with many other healthcare leaders, rose to the challenge by participating in expert panels and steering committees guiding the project. Leadership support was demon-

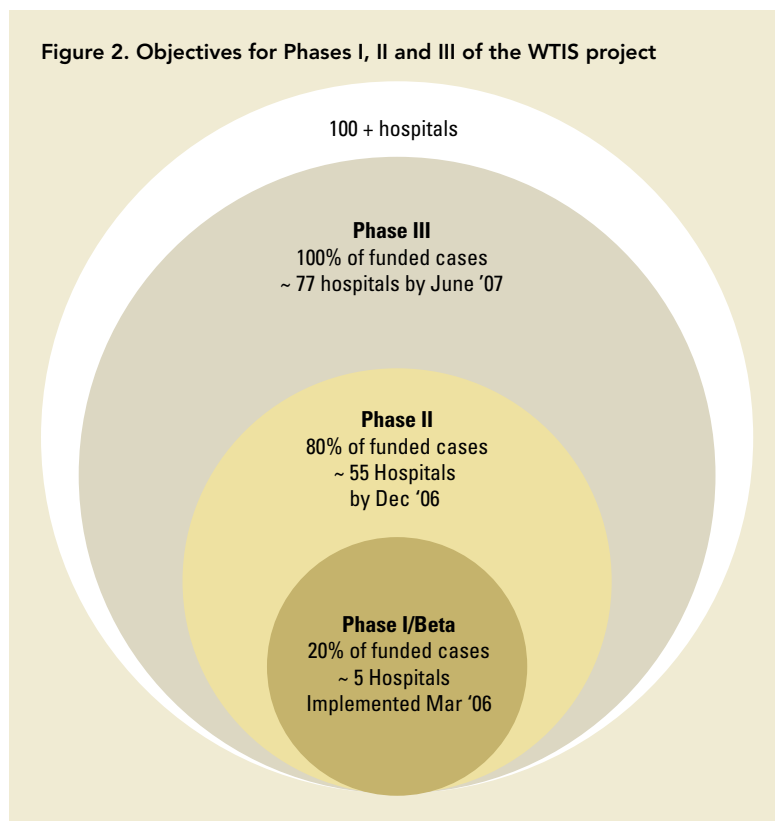
strated in many forms – through executives and clinical leaders participating in hospital meetings to endorse the project, provision of resources such as computers to clinician offices and in ongoing input. In many ways, this role modelling on the part of leadership resulted in LHINs, hospitals and clinicians increasingly working together to share knowledge, and in some cases, resources, to support one another.

With the accountability to improve access to care and reduce waits, hospitals participating in the WTIS project received financial support from the MOHLTC to fund more operating room time so that more surgeries could be performed. This government investment resulted in unprecedented increases to surgical capacity for selected services. As mentioned previously, Accountability Agreements made with hospitals required strict

through the WTIS Project Steering Committee, was factored into deployment planning and, to a certain extent, timing, so that hospital activities and resources could be coordinated. Although timelines remained aggressive, these early consultations allowed the WTIS project team to establish clear expectations and milestones from the start. Hospitals were provided guidance on anticipated work efforts so that they could align resources early, along with tools to help them keep an eye on upcoming activities and track their progress. These processes and tools are further discussed in the article "Taking It to the Streets: Delivering on Deployment," page 30.

Individual clinicians also had accountabilities in the deployment of the WTIS. Clinicians, who had so far been maintaining individual wait lists, were now required to centrally report wait

**Figure 2. Objectives for Phases I, II and III of the WTIS project**



### Lessons Learned

1. **Clearly define objectives and outcomes** – Individuals cannot be expected to be accountable if they do not know or understand what exactly it is they need to achieve.
2. **Establish a clear and streamlined accountability structure** – Well-rounded business and clinical input is important and must be solicited to guide the development and deployment process, but accountability for the final decisions and answers should rest with one designated leader.
3. **Use leaders as role models** – Leaders must be willing to set an example for others and be clear on all participant roles and responsibilities.
4. **Communicate regularly and consistently** – Do not assume people remember, understand or accept their accountabilities after hearing it once. Provide plenty of opportunities for repeating messages and for people to seek clarification through various channels and project champions.
5. **Identify the value proposition for all participants** – Accountability cannot be achieved through a one-size-fits-all approach; needs and challenges will vary by stakeholder.
6. **Ensure individuals have some control over their accountabilities** – To take on accountability, individuals must have the flexibility to make adjustments to their unique circumstances and be given opportunities to use personal judgment and discretion, with strategic guidance provided.
7. **Enable individuals and organizations to be accountable** – Provide appropriate levels of support but balance central control with local ownership for activities.
8. **Be open to feedback and changes** – Regularly ask for feedback, and have processes in place to refine accountabilities as situations change and needs arise. Most importantly, act on the feedback provided.
9. **Follow through on commitments with fair repercussions** – Accountability cannot be enforced if there are too many exceptions to the rule.

funding conditions to be met, including reporting wait time data through the WTIS and ensuring that incremental cases performed for the five priority wait time service areas would not be at the expense of other non-priority areas.

Hospitals were also accountable for preparing their organizations for the implementation of the WTIS. Large-scale initiatives have been known to take a one-size-fits-all approach, unintentionally undermining local engagement. With 80+ participating hospitals, the WTIS project team let local expertise drive problem-solving and preparation for deployment at

the hospital level. Hospital teams were given access to Steering Committee members and Clinical Expert Panel chairs so that local needs could be factored into deployment strategy and approach, and assigned single points of contact on the WTIS project team to provide dedicated support and assistance. This allowed the local level to apply a home-grown methodology for the provincial initiative, which became critical to the success of the overall deployment. Specific details on how hospitals were supported can be found in the “Taking It to the Streets: Delivering on Deployment” on page 30.

Clinicians were accountable for providing the necessary patient information to hospitals so that surgeries could be booked appropriately, wait times tracked and potential problems addressed. They were required to use wait list data to better manage their wait lists. This was an entirely new way of working for clinicians who were concerned about losing autonomy over their private operations. Through the WTIS project, clinicians were provided much support to prepare for the deployment and use of the WTIS and reports. For those who needed it, hospitals made the investment in computer equipment and Internet connections in clinician offices so that the web-based application could be directly accessed. All clinicians received training on the use of the system and, importantly, how the data could be used to make the case for more OR time for their patients. And, they were supplied with the necessary tools to support standardized prioritization of patients and accurate data entry.

Despite best efforts, some hospitals were initially unable to meet all conditions of wait time funding, sometimes due to a disconnect with clinicians or difficulty in enforcing wait time reporting requirements. In later phases of the project, anticipating this resistance, some hospitals instituted their own policies that required clinicians to report wait time data in the WTIS before they were granted access to operating room time.

Along with accepting accountability, individuals must be prepared to face the consequences of not meeting commitments. At the same time, these consequences must be fair and appropriate. Hospitals faced the real possibility of having wait time funding reclaimed by the MOHLTC if conditions set out in the Hospital Accountability Agreements were not met. As well, hospitals who did not submit wait time data according to requirements were informed that they would be noted on the Wait Times website as “non-compliant”, creating negative perceptions in their local communities. All stakeholders were advised of these potential ramifications before hospitals signed their accountability agreements, ensuring they were understood by everyone. Early on, there was some skepticism about whether consequences would be enforced; however, the seriousness of the accountability model became clear through repeated messages and as consequences indeed ensued for hospitals that failed to meet their commitments.

### Identifying and Addressing Obstacles

Effectively supporting stakeholders in achieving accountabilities also means removing obstacles standing in the way of progress. Privacy of personal health information that would be collected and disclosed through the WTIS, as an example, was a particular concern raised by all levels of healthcare. The project team took steps to complete a privacy impact assessment and developed a comprehensive strategy and independent governance frame-

**Once a project is implemented, the initial momentum and motivation can dissipate quickly. To ensure new behaviours and results are sustainable, participants must have some control over what their accountabilities are and how they achieve them thereby by creating a culture of reinforcement and enforcement.**

work to address and mitigate these concerns. CCO also liaised with the Information and Privacy Commissioner for Ontario to ensure the assessment results and the privacy governance structure aligned with provincial privacy best practices.

Once a project is implemented, the initial momentum and motivation can dissipate quickly. To ensure new behaviours and results are sustainable, participants must have some control over what their accountabilities are and how they achieve them thereby by creating a culture of reinforcement and enforcement. Comparative reporting used throughout the WTIS project phase continues today in day-to-day operations. Monthly public reporting of wait time results via the provincial website and hospital compliance reporting on funding conditions keep the spotlight on performance management and stakeholder accountabilities in reducing wait times. As clinicians, hospitals, LHINs and the government compare and monitor their progress, new levels of collaboration and best practice sharing are taking place and continuing to drive the initiative forward. Hospital Accountability Agreements are being updated annually to reflect the expanding use of the WTIS and data, with more sophisticated criteria and parameters to incent continuous improvement.

### Conclusion

Much has changed since Ontario's Wait Time Strategy and the WTIS was launched. Today hospital CEOs are using information collected through the system to manage access to care, waits for services, and patient flow within their organizations. Clinicians are providing the necessary patient information to hospitals so that surgeries can be booked, wait times tracked and potential problems addressed. Hospitals are being regularly

audited to determine whether they are meeting the terms of their accountability agreements. With few exceptions, hospitals are fulfilling funding conditions, which continue to evolve to include more performance and efficiency factors.

The accountability model used by the WTIS project now serves as a benchmark to which other provincial initiatives are compared. Adjustments to the model will continue to be required to ensure accountabilities are sustained as the healthcare landscape changes, particularly in relation to the evolving role of the LHINs. It is anticipated that more government healthcare initiatives will follow a similar philosophy of accountability based on collaboration, trust and support so that accountability is welcomed and becomes the new norm within healthcare.

### References

- Brown, A.D., C. Porcellato and J. Barnsley. 2006. "Accountability: Unpacking the Suitcase." *Healthcare Quarterly* 9(3): 72-5.
- Trypuc, J., A. Hudson and H. MacLeod. 2007. "Evaluating Outcomes in Ontario's Wait Time Strategy: Part 4." *Healthcare Quarterly* 10(2): 58-67.
- Harber, B. and T. Ball. 2003. "From the Blame Game to Accountability in Healthcare." *Policy Options* November: 49-54

### About the Authors

**Sarah Kramer** is President and CEO of eHealth Ontario. Previously Sarah served as the Vice-President and Chief Information Officer with Cancer Care Ontario, as well as the Lead for the Ontario's Wait Time Information Management Strategy.

**Rachel Solomon** is a Director at the Toronto Central Local Health Integration Network. Previously, she was the Project Manager for the Ontario Wait Time Strategy from 2004 through 2006.

**Chris Dingman** is a consultant specializing in leading and advising on complex transformation programs in health care, financial services and the public sector. As Project Director, she led the successful development and implementation of the WTIS and Enterprise Master Patient Index projects.

# Sustaining Accountability

Matthew Anderson and Lewis Hooper

**A**s part of Ontario's ambitious health transformation agenda, 14 Local Health Integration Networks (LHINs) were created with the responsibility to plan, fund and integrate local healthcare services. As a result, LHINs are key stakeholders and play a critical role in the future of the province's Wait Time Information System (WTIS). As members of the WTIS project Steering Committee, these LHIN Leads share their thoughts and experiences in achieving accountability to make the WTIS a success.

**IN: What were the biggest challenges in achieving accountability for the WTIS project? Was the project successful in overcoming these challenges? If so, how?**

MA: We faced many challenges. The greatest challenge was creating a new culture of transparency, reporting and accountability in the health care system. There are components of healthcare spending for which there is minimal clear accountability. This happens in all sectors of healthcare and there is significant complexity to changing this. It is important to note that, in most cases, organizations and individuals have acted prudently with the funds despite the informal accountability structures. But this same advantageous flexibility in our health care system can also be contributed greatly to the substantial gaps in the available care.

**We faced many challenges. The greatest challenge was creating a new culture of transparency, reporting and accountability in the health care system.**

LH: Collectively, healthcare is accountable to many masters: the patients we serve, the funders, the various professional regulatory bodies, the organizations providing services, professional standards of ethics and behaviour, and so on. However, with the exception of some financial matters and an eye on volumes, there is little direct accountability for results, particularly between the funders/stewards and healthcare providers. In my opinion, the major challenge was that the funder could not hold the healthcare provider publicly accountable for a standard that was neither financial nor professional, but rather focused on performance. The success of the WTIS project was that the field accepted this accountability willingly, and concerns tended to focus more on the mechanics of the changes, as opposed to the principle. This was certainly aided by the initial financial incentive for incremental volumes in some areas.

---

IN = Interviewer    MA = Matthew Anderson    LH = Lewis Hooper

**IN: Now that the transition has been made from government to LHINs, what factor(s) in achieving accountability were/are most important for you in managing your own accountabilities?**

MA: One of the main challenges that the WTIS project overcame was setting the tone for accountability at a provincial level. We can now build on that at the LHIN level. Without the implementation of the WTIS project, it is doubtful the LHINs could have driven forward with a performance management agenda. With 14 networks moving at different rates, the push back from the field could have been overwhelming.

LH: There are several components of the success that must continue onward to make LHINs effective. The strong mandate that came with the WTIS initiative must be maintained. Government and the LHINs must continue to focus on accountability as one of the key driving forces, and they must ensure that accountability is placed on results, not process. Another key success factor is in ensuring transparency is maintained as it was during the WTIS project. Participants in the process knew what was happening, when it was happening and why. Finally, there was a sense conveyed in part through the Hospital Accountability Agreements signed by the participants that accountability would be real and performance would be monitored, and that the results of that performance would be used in meaningful ways as feedback to the accountability.

**IN: How can the accountability achieved be sustained? What can others learn from this experience?**

MA: For the accountability to be sustained in the long run, it is important that it be kept public, transparent and timely. The WTIS operations team needs to work with the LHINs to embed this approach into their work and goals. It must permeate all levels of planning, and there must be a consistent thread connecting targets and goals from province to LHINs, and from LHINs to healthcare providers. Without that thread, the agenda becomes too diffused, and substantial gains will not be realized.

LH: There are several key factors in sustaining the accountability that started with the WTIS project. They include the ongoing maintenance and continued development of tools. As these tools become less intrusive and more a part of the ongoing workflow, and as clinical management systems become more predominant in physicians' offices, reporting difficulties will become non-issues. There are two other related issues that I think will drive the sustainability of accountability: Ongoing, meaningful attention will need to be paid to the Hospital Accountability Agreements from the LHIN/government in a

way that gives incentives to healthcare providers to be accountable. Failures and successes must be dealt with in a fair, transparent way. Poor performance must not be accepted, but must be dealt with in a fair and not necessarily punitive way. Success,

**...the major challenge was that the funder could not hold the healthcare provider publicly accountable for a standard that was neither financial nor professional, but rather focused on performance.**

if not rewarded, must be recognized in meaningful way. The system as a whole must know that accountability will continue to be taken seriously and valued by all parties.

Finally, the accountability will be sustained by the ongoing expansion of accountability to other areas. This expansion must be based on accountability for results and meaningful outcomes, not process. Healthcare as a whole and funders in particular are quite good at substituting process measures for outcome measures, and for accountability to be a transformational activity in healthcare we must move from measuring process, such as cases or volume of patients in diabetic education, to accountability for outcomes such as wait times, Hospital Standardized Mortality Ratio or the rate of amputations due to diabetes.

**About the Authors**

**Matthew Anderson** is the Toronto Central LHIN CEO. Prior to this appointment, Matthew was the Senior Vice-President, Performance and Technology of the University Health Network.

**Lewis Hooper** is the eHealth LHIN Lead for the Central East LHIN and co-chair of the Ontario Provincial Council of eHealth LHIN leads.

# Taking it to the Streets: Delivering on Deployment

Dafna Carr, Vickie Welch, Trish Fabik, Nadir Hirji and Casey O'Connor

## Introduction

From inception to deployment, the Wait Time Information System (WTIS) project faced significant challenges associated with time, scope and complexity. It involved not only the creation and deployment of two large-scale province-wide systems (the WTIS and Ontario's Client Registry/Enterprise Master Patient Index) within aggressive time frames, but also the active engagement of 82 Ontario hospitals, scores of healthcare leaders and several thousand clinicians who would eventually be using the new technology and its data. The provincial WTIS project team (see Figure 1) also had to be able to adapt and evolve their planning in an environment that was changing day-by-day.

This article looks at the factors that allowed the team to take the WTIS out to the field and shares the approach, processes and tools used to deploy this complex and ambitious information management and information technology (IM/IT) initiative. (More information about Ontario's Client Registry/Enterprise Master Patient Index can be found in "Building a Sustainable System: The Making of the WTIS" on page 43.)

## Leverage the Beta Experience

The WTIS project began with a Beta test in October 2005 as Phase I. Unlike a Pilot, which tests whether or not to proceed with a solution, a Beta uses the first iteration of an identified technology to run a "live" trial of the initial system requirements and functionality. This phase also helped the project team

identify the support and processes required for deployment of the product.

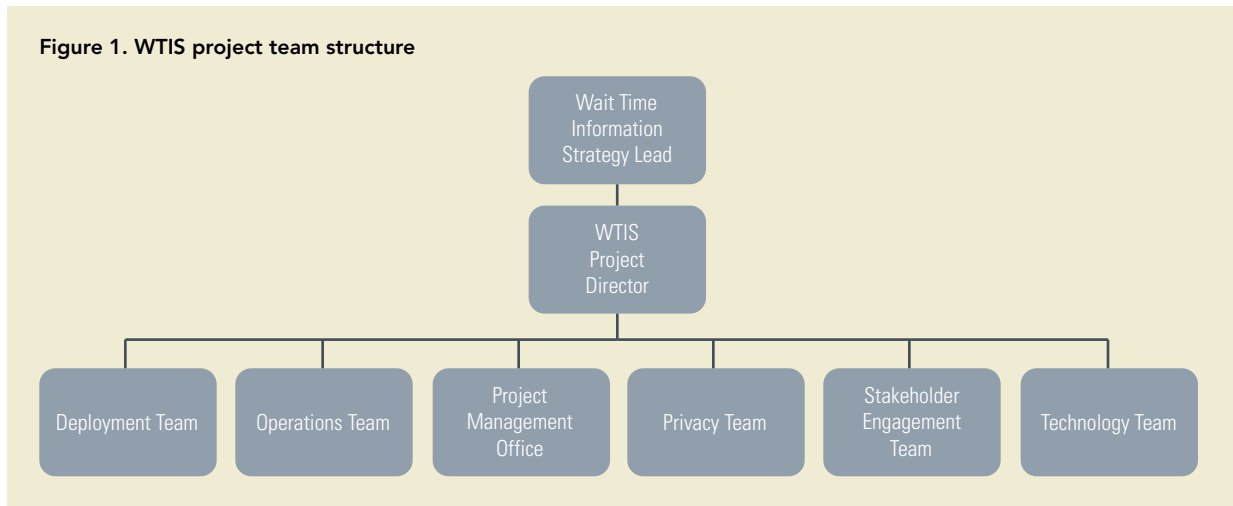
As they seek to uncover obstacles, Beta experiences are expected to be difficult and bumpy. To capture a range of scenarios and challenges, five hospitals representing a cross-section of hospital variables – small and large, urban and rural, adequate and fewer

**These [five] hospitals** were willing to face the risks associated with being part of a Beta in exchange for the opportunity to get a higher-level of support from the WTIS project team and the chance to help shape the system and its future deployment.

resources – were selected to participate in Beta/Phase I. These hospitals were willing to face the risks associated with being part of a Beta in exchange for the opportunity to get a higher level of support from the WTIS project team and the chance to help shape the system and its future deployment. Both the project team and Beta hospitals were learning in a just-in-time manner, requiring much patience and trust on both sides.

Through Beta/Phase I, the project team was able to discover and apply some valuable lessons that eventually turned out to

Figure 1. WTIS project team structure



be critical success factors in the broader implementation of the WTIS. These included the need to provide “high-touch” support to hospitals throughout the deployment, a strong communications plan to keep all stakeholders informed and involved, and a central information repository as a way to ensure all hospital staff working on the WTIS project and other stakeholders had access to the same pertinent information.

### Secure Experts, Create One Team

Even while leveraging its existing infrastructure and experienced resources, Cancer Care Ontario (CCO) knew that additional capacity would be required to support a large-scale initiative such as the WTIS project, particularly within the tight time frames, and took the necessary steps to augment the project team.

Sarah Kramer, the Wait Time Information Strategy Lead, began by building a team of experts with proven delivery and change management experience, including some non-traditional choices with experience outside healthcare (e.g., financial services). Drawing on “best in field” resources not only opened up the resource pool to specialized expertise, but also brought technology development and deployment best practices from a range of industries into consideration. Leads were identified for each of the project work streams (Deployment, Privacy, Project Management Office, Stakeholder Engagement and Technology) to form the project leadership team.

Although it would have been simpler from a procurement and ongoing management perspective to work with a single vendor, the leadership team decided that the complexity and timelines of this project required a variety of subject matter experts in order to create the highest probability of success. A broad set of skills and knowledge was assembled through resources from six core vendors, multiple smaller vendors and independent consultants. Drawing from different resource pools also gave CCO the flexibility to quickly scale up or down in line with

shifting requirements at various stages of the project.

With an array of resources pulled together from multiple areas, strong partnership and collaboration became cornerstones in the deployment of the WTIS. The project leadership team knew from experience that success depended on the ability to create a “one team” mentality. Unlike corporate projects, where individuals are part of one organization and share a corporate culture, the complexity of our healthcare system requires participation of multiple stakeholder groups, making consistency, collaboration and cohesion more difficult to achieve. To address this challenge, the project team made significant efforts to create a unified team with the understanding that

- project teams become high-performing teams when all members are committed, aligned and working toward shared goals;
- achieving a high level of stakeholder engagement requires consistent and coordinated activities and messages that can exist only when the project team’s culture and attitude reflects “one voice,” regardless of their parent organization.

In order to develop a unified team, the WTIS project would require an operating model that incorporated both vertical and horizontal team management. Vertically, work stream leads were accountable for managing their teams in the detailed planning and execution of their specific areas of focus. The interdependence of the work streams often meant a change in one area would impact another, necessitating a horizontal management view in which no change would be accepted without cross-functional approval. On at least a weekly basis, work stream leads would meet to bring forward the priorities, challenges and risks from their respective areas, sharing, weighing and discussing them at a program level. This was also critical to ensure that business needs and potential risks were identified and addressed proactively.

### Cross-functional Relationships Demonstrate their Worth

The value of the cross-functional relationship was put to the test and underscored in the weeks leading up to one of the “go-live” periods. In this instance, the Technology work stream discovered issues during the testing period that required additional investigation and testing time and could result in a delay to go-live. In many projects, decisions around how to manage this type of situation would have been left to the technology team, but, for the WTIS project, it was important to weigh the risks and impacts cross-functionally. Using this approach, the leadership team was able to identify the ripple effects of a delay through subsequent activities and milestones, including a significant risk to project credibility among stakeholders. The team concluded that while there were risks to face and additional work efforts required, it would be more prudent to delay go-live rather than compromise system performance. Through the cross-functional analysis, the team was prepared for the impact and able to proactively manage the issue and support hospitals through the change. Despite the delay, the project maintained credibility and hospital engagement.

### Communications – A Fundamental Component

As with any new initiative, the buy-in of the target stakeholders for the WTIS was dependent upon their understanding the reason for the change and its impact. Often overlooked in technology projects, communications became integral in creating awareness for the WTIS, demonstrating its value and engaging stakeholders.

While the communications function can serve to develop and deliver messages, the strategic value for the WTIS project was in communications having a broader role, with a seat at the

**The project leadership team knew from experience that success depended on the ability to create a “one team” mentality.**

leadership table and communications specialists embedded in individual work streams. In this way, communications helped the project team monitor the “pulse of the field” and ensure that messages were relevant, coordinated and aligned across activities. The team used an open, two-way communication model to create transparency and ensure stakeholders were always up-to-date on the project’s progress. The two-way model encouraged feedback from the field and helped to actively address stakeholder concerns, manage expectations and support adoption efforts.

### Ready-Set-Go

At the start of the project, Hospital Project Managers (PMs) assigned to the WTIS were concerned about the complexity of the initiative and the amount of information they would have to absorb. To help them, the communications team developed the Ready-Set-Go program – a series of toolkits that clearly identified what needed to be done, why, when and by whom.

Ready-Set-Go was effective because it approached the project from the hospital’s point of view. Along with a simplified high-level project plan created for hospitals, the toolkits provided step-by-step instructions, guidelines, resource requirements and deliverable dates for each major project activity that the hospital needed to complete (see Figure 2).

The program had three major sections:

- Get Ready – an overview of the project and high-level plan, along with an outline of preparatory activities that

would be important for hospitals to complete in order to set the groundwork for meeting project milestones.

- Get Set – a summary of the various toolkits (by major deployment activity) and an outline of the tasks hospitals would complete in order to be prepared for deployment by the set date.
- Go – an overview of the go-live process, including a checklist and guidance on what to expect during go-live and the subsequent transition to the operational state.

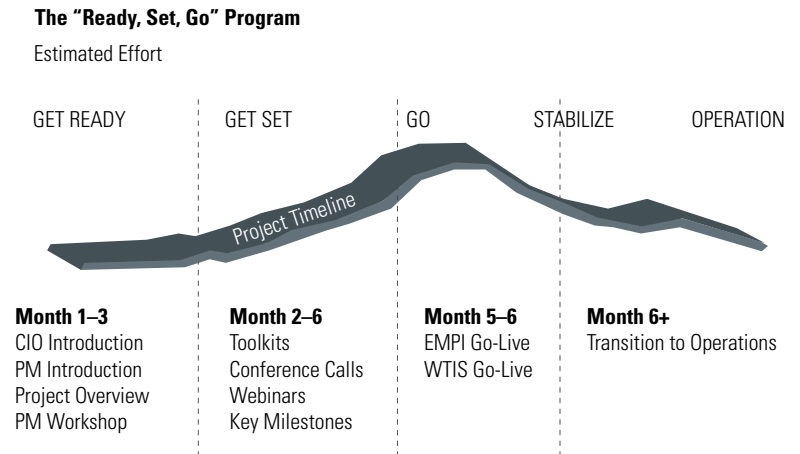
Many Hospital PMs indicated that this program was valuable in helping them plan their activities and resources more effectively. The ability to provide toolkits by subject matter took an overwhelming amount of information and made it more digestible and easier to use.

The Ready-Set-Go toolkits were introduced to Hospital PMs at WTIS project kick-off workshops (described later in this article) and were designed to be used as the primary “go-to” reference through all stages of deployment (see Table

1.) The toolkits were modified for greater clarity and ease of use based on feedback and lessons learned from each phase. They eventually evolved to become reusable operational materials, re-packaged as “Practical Guides” that would serve as a reference as the WTIS continued to expand. The guides are now also used as part of the orientation for new WTIS hospitals and project managers.

The communications strategy and approach is discussed further in “An Integrated Approach to Stakeholder Engagement” on page 62.

**Figure 2. “Ready-Set-Go” work effort and major activities**



**Table 1. “Ready-Set-Go” program toolkits**

<b>Guidance (introduction and overview)</b>	Provides a brief introduction to the WTIS project and answers frequently asked questions about the WTIS and overall strategy.
<b>Stakeholder Engagement Toolkit (adoption, training and communications)</b>	Presents an overview of all the tools and support available during the project for communication, adoption, impact to workflow, training and priority assessment tools
<b>Surgeon Connectivity Toolkit</b>	Provides step-by-step guidance on what Hospital PMs and other hospital team members need to do in order to work with the Smart Systems for Health Agency to establish Internet connectivity in surgeon’s offices
<b>Hospital Connectivity Toolkit</b>	Provides information needed to successfully establish the different types of connectivity to the WTIS and Client Registry/EMPI environments
<b>Integration Toolkit</b>	Helps Hospital Project Managers and their teams prepare for the integration and interfacing requirements of the WTIS–EMPI (Client Registry) project
<b>Procedure Mapping Toolkit</b>	Provides guidance in completing procedure maps, including important information concerning the types of procedures that should be included for reporting and how they should be mapped
<b>Registration Toolkits</b>	Outlines the different types of registration required, including information explaining the registration process, job aids and registration tools
<b>Testing Toolkits – Client Registry/EMPI and User Acceptance Testing (UAT)</b>	Client Registry/EMPI – Provides the components to assess applicable hospital network and systems to identify appropriate type and number of testing resources UAT – Provides information required to facilitate user acceptance testing of the WTIS application to ensure key objectives are met
<b>Privacy Toolkit</b>	Includes six informational tools for hospitals that describe the collection, use and disclosure of personal health information via the WTIS and EMPI, and an EMPI Data Protection Requirements Checklist
<b>Legal Toolkit</b>	Includes legal agreements used to describe hospitals’ and Cancer Care Ontario’s responsibilities as they relate to the use of the WTIS and Ontario’s Client Registry/EMPI
<b>Go-Live Toolkit</b>	Helps hospital teams through the days pre- and post-Go-Live, as hospitals switch from an implementation phase to an operational one

### **Establish Single Points of Contact**

The Beta/Phase I experience demonstrated that hospitals would need a strong level of individual support throughout the deployment effort. The project team also recognized that it would not be possible to reach all stakeholders directly. The balance came from an approach that identified individuals from the project team and from each hospital who would become the single points of contact for all WTIS-related information and support.

### **While email communication is convenient, it is ineffective as the sole vehicle for delivering information for complex, large-scale projects.**

Being able to turn to an individual dedicated as the conduit for information helped establish the necessary relationships and provide the high-touch support that became so valuable in instilling confidence and building trust throughout the project. The approach also proved highly effective in making the best use of resources for the hospital and the project team and created efficiencies in the ability to fulfill requests for information and support.

### **Provide a “Single Source of Truth”**

As the scope of the project grew beyond Beta/Phase I and expanded to more hospitals and clinicians, the project team anticipated the need for a more effective and efficient means of sharing and exchanging information that could serve as the “single source of truth” for all current project information.

While email communication is convenient, it is ineffective as the sole vehicle for delivering information for complex, large-scale projects. With many activities to track and new information to be relayed on an almost daily basis, email can become unruly. One Site Lead reported receiving 900 email messages during Beta/Phase I alone.

Using an online collaboration tool, the project team developed a secure central information repository from which project and hospital team members could access the same up-to-date information. The repository also included a robust question and answer database to record questions from all hospitals and store updated answers as more information became available. All communication updates and revised support materials were also housed on this site as they were released, to be downloaded by hospitals as needed.

### **Keep Clinicians Top of Mind**

Getting clinicians to buy into new healthcare technology initiatives continues to be a challenge (Canadian Medical Association n.d.). Clinicians are often sceptical of new technology and

understandably concerned about new initiatives that could result in competing priorities or increased workload.

The concerns around the WTIS were no different, and the project team knew that it had to keep the clinician’s perspective top of mind through every step of deployment. A comprehensive stakeholder engagement program, which included a focused effort on driving adoption of the WTIS among clinicians, became an integral part of ensuring the WTIS could be successfully deployed. Adoption efforts involved demonstrating clear value of the program for clinicians, solutions and tools to help remove barriers that stood in the way of implementing the technology and the use of “clinician champions” to serve as advocates of the program among their peers. Further details on the project’s stakeholder engagement program can be found in “An Integrated Approach to Stakeholder Engagement” on page 62.

### **Set the Pace from the Start**

Time was of the essence for the WTIS project. The government had publicly committed to have the WTIS deployed across the province by June 2007, and everyone understood that this deadline was immovable. The project team used the timing challenge to their advantage, recognizing that speed of activity can be used to ensure priority and drive urgency. It was important to set the pace from the start and get momentum going as quickly as possible.

At the start of each deployment phase, a WTIS kick-off was organized in the form of a one-day orientation workshop that brought all Hospital PMs together with the WTIS project team in Toronto. The workshop was effective in reinforcing the mandate and urgency of the WTIS project and, more importantly, helped establish relationships that were integral to setting the foundation for the hospital and project team to work together. By providing an opportunity for everyone to hear about timelines and expectations at the same time, the team ensured that all parties were at the same starting point and understood their role in helping to meet the public commitments for wait times. (See Figure 4 for overall timing and sequence of activities for deploying a phase of the WTIS.)

### **Create Opportunities to Learn as You Go**

The project team used a phased approach to deploy the WTIS to hospitals. With the input and agreement of LHIN and hospital executives, hospitals were assigned to a phase. Some facilities were keen to be early adopters and participate in Phase I for the opportunity to help shape the deployment program and the system. Others preferred to take a “wait and see” approach and participate in a later deployment so that they could benefit from lessons learned in earlier phases. Technical factors such as technology experience and challenges, resources, integration level and past experiences with similar initiatives were primary considerations when determining which phase a hospital would

### Single Points of Contact Working Together

On the hospital side, the PMs assigned to manage the deployment of the WTIS at their respective sites became the single points of contact that all hospital staff could turn to for up-to-date information on WTIS deployment activities and requirements. The PMs also provided the channel through which clinicians could voice questions and concerns.

all deployment activities. With access to the various subject matter experts within the project team, they were able to get the right information to the hospitals in a timely manner. Figure 3 shows the single point of contact model used by the WTIS project team.

Site Leads were assigned hospitals based on similarities in infrastructure, vendor partners, type of hospital or information systems. Where possible, hospitals in the same LHIN were kept together and allocated the same Site Lead. Grouping hospitals in this manner provided the opportunity for facilities to create an informal support network through which they could work together to find solutions to common concerns and issues. In some cases, Hospital PMs within an assigned group arranged their own regular meetings to exchange information, advice or best practices. This helped create the opportunity for “role modelling” among hospitals and also decreased the level of reliance on the project team. (Hospital PMs’ responsibilities are shown on Table 2.)

Although the single point of contact approach proved to be highly effective in making the best use of limited resources, the project team still needed to address the diverse experiences and skill sets among Hospital PMs. Some had more project management experience, while others had more clinical or technical knowledge. To supplement the range of knowledge, additional tools and support were provided, including orientation workshops conducted at the start of implementation phases and the Ready-Set-Go toolkits described in this article.

Figure 3. The WTIS team’s single point of contact model

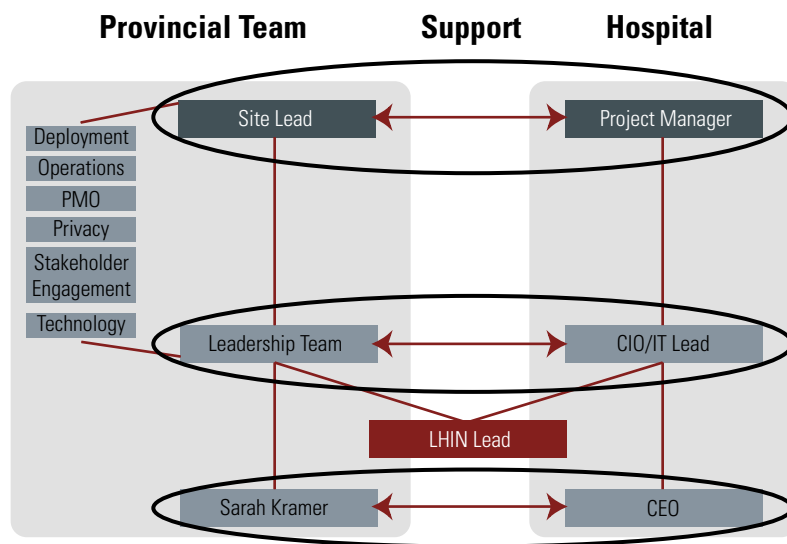
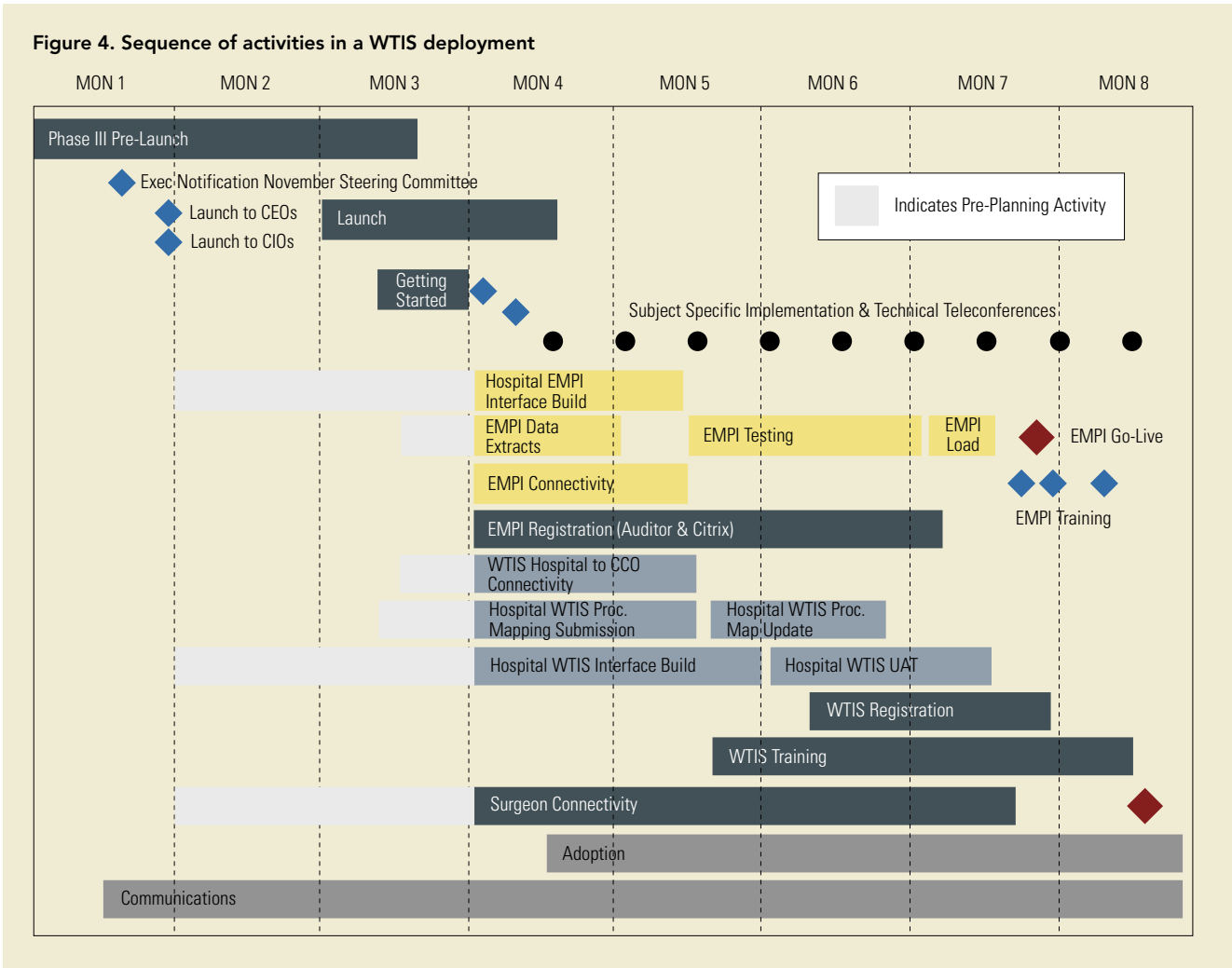


Table 2. Hospital WTIS Project Managers’ roles and responsibilities

- Manage the overall project including coordination of all hospital WTIS tasks
- Follow good project management practices such as keeping sponsors informed, managing and resolving issues
- Attend and participate in status calls and report on your hospital’s status
- Develop detailed working knowledge of WTIS
- Liaise with the WTIS project team Site Lead

In turn, Hospital PMs were given a single point of contact within the WTIS project team, referred to as Site Leads. These Site Leads worked with between four and seven hospitals to provide ground-level support, and served as the primary channel for getting answers and guidance on

Figure 4. Sequence of activities in a WTIS deployment



be ready to deploy. Once hospitals were assigned to a deployment phase, they were slotted into rollout waves for go-live. Phases II and III each had three waves of go-lives staggered a few weeks apart.

This phased approach heightened the complexity of the project. The many levels of interdependent and overlapping activities and resources required a rigorous and highly coordinated planning effort. At the same time, it provided tremendous payoff in terms of hospital preparedness and the opportunity to apply lessons learned throughout the project. It allowed hospitals that needed it the time to get their systems and resources ready to support the WTIS, as well as the opportunity to learn from others' experiences. In addition, it gave the project team the opportunity to learn from each rollout and make changes and improvements for the next.

**Using an online collaboration tool, the project team developed a secure central information repository from which project and hospital team members could access the same up-to-date information**

**Commit to a "No Surprises" Approach**

No project plan is ever perfect. Even the most carefully crafted plans encounter some variances along the way and require adjustments. What cannot change, however, are the project's confirmed objectives and end goals. The WTIS project was clear about its objectives from the start and worked to ensure the expectations on what it would take to achieve them were understood by everyone involved. If the project began to steer off

Figure 5. Sample Indicator Report

LHIN	Facility Name	Submit: Network Order Agreements	Confirm: Hospital Chiefs Attend Clinical Engagement Kick-Off Call	Confirm: WTIS Expansion Facility Project Plan Developed	Confirm: Interface Development Started (If Applicable)	Confirm: Procedure Mapping Started	Complete: Clinician Landscape Review	Complete: Progress Assessment of Clinician Engagement	Complete: Distribution of Priority Assessment Tool Cards	Submit: Network Order Agreements
		1-Jun-07	11-Jun-07	11-Jun-07	11-Jun-07	18-Jun-07	21-Jun-07	1-Jul-07	15-Jul-07	15-Jul-07
2	Hospital A	Green	Green	Green	Green	Green				
4	Hospital B	Green	Green	Green	Green	Green				
7	Hospital C	Green	Green	Red	Green	Green				
8	Hospital D	Green	Green	Green	Green	Green				
12	Hospital E	Green	Green	Green	Green	Red				
13	Hospital F	Green	Green	Green	Green	Green				
14	Hospital G	Green	Green	Green	Green	Green				

**Legend**

- Past due / At risk
- Complete / On target
- Progress tracking not started
- Not Applicable  N/A

course and additional tasks or changes were required, all parties were advised so that no one was caught off guard. This level of transparency in objectives, expectations and issues management ensured there were “no surprises” along the way. In order to clearly monitor assigned activities, the project team relied on a couple of key tactics described below.

**Indicator Report**

With numerous activities to manage in a short time, the project and hospital teams needed a way to easily track the status of deliverables over the course of the project. Although the hospital go-live dates were staggered, they were close enough that any change would significantly impact project resources and the sequencing of activities. A delay with any one hospital had the potential to jeopardize overall deployment goals.

Based on CCO’s experience in managing previous provincial healthcare projects, the WTIS project team understood how valuable an “Indicator Report” (Figure 5) could be in helping keep the project on track. The team made significant efforts to identify the actions that would indicate progress against every

**The project team** used the timing challenge to their advantage, recognizing that speed of activity can be used to ensure priority and drive urgency. It was important to set the pace from the start and get momentum going as quickly as possible.

critical project task. Through the report, the status of each critical task (“indicator”) against deployment milestones was tracked on a weekly basis. With each phase, the indicators grew more sophisticated and effective in assessing status.

Shared both internally and externally, the Indicator Report was vital to the “no surprises” approach and demonstrating transparency across all stakeholders.

A key feature of the report was its ability to be forward-looking. Many other approaches tend to report on what has already happened, providing little opportunity for corrective interventions. The WTIS project’s Indicator Report also

tracked the number of units completed against an expected result over time, at a fairly granular level. This enabled the team to predict which deliverables were likely to be late and make the necessary escalations to ensure schedules could be maintained.

The project team reviewed the report at weekly meetings to monitor status and determine if any areas required intervention to head off potential problems. Similarly, Site Leads used the report as a project management tool with their Hospital PMs. During weekly status reviews, Hospital PMs and Site Leads discussed upcoming deliverables and identified areas requiring additional support well before they became issues. For example, getting clinicians set up with an Internet connection so that they

### The Indicator Report and working relationship between Hospital PMs and project Site Leads provided the means to identify issues early. Early detection meant early resolution.

could access the WTIS required a long lead time. From the Beta experience, this proved to be a challenging milestone to meet. To avoid these difficulties in subsequent phases, the project team identified several points throughout deployment at which hospitals could measure progress against this activity. Hospital PMs were asked to keep count of the number of clinicians that had established Internet connections at each point, helping keep the activity top of mind for both the project and hospital teams.

Every other week, the Site Lead and Hospital PM would confirm the status against the designated indicators and an update would be provided to hospital and LHIN executives. This ensured project and hospital teams were working with the same agenda and could maintain the level of trust that was so crucial in the success of the project.

#### Effective Issue and Escalation Management

Working with multiple levels of stakeholders and the unique needs of so many hospitals, the project leadership team needed a way to proactively manage risks. An escalation process was established that was embraced by both project and hospital team members.

Initially some Hospital PMs were apprehensive about calling out issues and the subsequent escalation. The Indicator Report and working relationship between Hospital PMs and project Site Leads provided the means to identify issues early. Early detection meant early resolution. Therefore, to alleviate the PMs' concerns, the project team needed to ensure that when issues were identified, the focus turned immediately to solutions.

#### Lessons Learned

1. **Take calculated risks** – In significant change initiatives, answers are not always readily available. Instead, leverage start-up momentum and use issues and risk-management processes to compensate for not having all the answers upfront.
2. **Establish single points of contact** – Use dedicated Site Leads during deployment to work with dedicated project managers/coordinators on the hospital side. This allows the establishment of business relationships and better communication between project and hospital stakeholders.
3. **Employ a “no surprises” approach** – Build a culture of trust and goodwill by being clear about what is needed by when and providing tools to measure progress along the way. Project plans are important in setting expectations, but a user-friendly tracking tool such as an Indicator Report can proactively identify issues and is an ideal partner to performance management.
4. **Secure communications support** – The power of using communications strategically cannot be underestimated. Done well, it can ensure consistent and coordinated messages reach all stakeholders, keep them on the same page, and speed up deployment activities.
5. **Embrace issues and escalations** – Issues are bound to arise in any project. The earlier issues are identified the better. Focusing on solutions and teamwork will minimize the fear of being blamed and encourage individuals to share issues and risks sooner.
6. **Make room for local solutions** – Working with multiple stakeholders means dealing with diverse skill sets and needs. With overall timelines, milestones and expectations set upfront, give as much guidance as possible to allow individuals to adjust their plans based on local circumstances.
7. **Leverage all learning opportunities** – Establishing a formal lessons-learned program ensures feedback is gathered from all stakeholders and helps to document and prioritize opportunities for improvement.
8. **Acknowledge the work effort of the field** – Stakeholders in the field (hospital executives, project managers, clinicians) are critical to the success of any large-scale health-care project. Their active engagement and involvement is required to support deployment efforts. Ensure their perspectives and concerns are heard and accounted for in your project plans and that their work effort and commitment in the initiative is acknowledged throughout.

Hospital PMs eventually came to rely on the issue and escalation process to highlight the need for further attention and support. For example, when a hospital milestone was in jeopardy, indicated by “red” status, the project team had a clear process and

lines of communication to help PMs work with and gain the support of their CIO or director of IT. Some PMs began leveraging red status on the Indicator Report to rally support from their executives when all other means had been exhausted.

The specific escalation process depended on the situation; some were resolved through communications with the Hospital PM, and others involved the hospital CEO or LHIN. In all cases, regular status reporting meant that stakeholders were not surprised by any flagged issues.

The same approach was used internally by the project team and made CCO equally accountable for meeting project timelines. Internal and external escalation of issues, particularly at the earlier stages, meant that appropriate attention could be given before it impacted the schedule.

**By the end of Phase III deployment in June 2007, the WTIS was being used in 81 hospitals and 1,700 clinician offices, and was capturing an estimated 1.2 million procedures, including 100% of wait time funded procedures. Two years later, it has been expanded to a total of 86 hospitals, is used by 3,300 clinicians, and is capturing approximately 2.2 million surgical procedures and MRI/CT scans, approximately 85% of all surgical cases in Ontario.**

## Results

With hundreds of project tasks and dozens of project milestones to meet, the WTIS project encountered only two instances where a go-live had to be delayed slightly due to system performance issues during testing. Using a highly coordinated vertical and horizontal management approach and consensus-based decision making, the project team was fully prepared to respond to the issues and communicate related amendments quickly to all stakeholders. While the delays meant additional preparation work for project and hospital teams, momentum remained intact and hospitals appreciated that system performance quality would not be sacrificed. In the end, the project team and hospitals were able to fulfill the original mandate for deployment of the WTIS and meet the government's public reporting commitment.

By the end of Phase III deployment in June 2007, the WTIS was being used in 81 hospitals and 1,700 clinician offices, and was capturing an estimated 1.2 million procedures, including 100% of wait time funded procedures. Two years later, it has

been expanded to a total of 86 hospitals, is used by 3,300 clinicians, and is capturing approximately 2.2 million surgical procedures and MRI/CT scans, approximately 85% of all surgical cases in Ontario.

Work is now underway to leverage the system to capture what is referred to as "Wait 3" – the period between when a patient in an acute care facility is assigned to an alternate level of care (ALC) and the date of their discharge to the ALC. The WTIS also holds promise for capturing more of the continuum of care and supporting performance improvements in the broader health system. More information about the future of the WTIS can be found in "Transitioning Initial Success into Sustainable Results: The Future of the WTIS" on page 84.

## Reference

Canadian Medical Association. n.d. "IT in General Practice: A 10-Country Comparison." Retrieved October 17, 2008. <[http://www.cma.ca/index.cfm/ci\\_id/49047/la\\_id/1.htm](http://www.cma.ca/index.cfm/ci_id/49047/la_id/1.htm)>.

## About the Authors

**Dafna Carr** is the Director, eHealth Strategy & Partnerships at Cancer Care Ontario. Dafna was the Implementation Lead for Phase I and II WTIS and Enterprise Master Patient Index Projects. Dafna's expertise is healthcare transformation enabled by information management and technology.

**Vickie Welch** is the Director of Risk Management, Resource Management and Business Planning at Cancer Care Ontario.

**Trish Fabik** is an independent eHealth Consultant. She has held various roles working in a wide-range of healthcare organizations including Cancer Care Ontario, SSHA and OntarioMD. She led the WTIS deployment for Phase III and WTIS Expansion.

**Nadir Hirji**, PhD, is a Senior Executive within Accenture's Health and Life Sciences practice. Nadir specializes in customer/patient centric transformation, health strategy, business model optimization / redefinition, and change management and adoption.

**Casey O'Connor** is a Senior Consultant with xwave, a division of Bell Aliant. Casey was a Team Lead responsible for planning and deployment for the WTIS expansion and has over 18 years of experience in project management, marketing and client relations in the healthcare industry.

# Words from the Street: Delivering on a Provincial Mandate at the Local Level

Jenny Cockram and Keary Fulton-Wallace

**A**t the local level, Hospital Project Managers (PMs) were single points of contact for the provincial WTIS project team and were responsible for delivering on all aspects of the WTIS deployment within hospitals. Here, two PMs share their WTIS deployment experience from Beta/Phase I (completed in March 2006) and Phase II (completed in December 2006). It was through valuable insight and feedback such as this that the provincial WTIS project team was able to make improvements for smoother deployment in subsequent phases.

**IN: How did the WTIS project compare to other healthcare information management/information technology (IM/IT) projects you've been involved in?**

JC: The WTIS was a focused project with very tight timelines that could not be missed. As one of the Beta hospitals, we had a very strong sense of teamwork because we were playing a big role in providing input for future phases. There was also a sense of excitement because we had the support to bring technology to physician offices that might have been disinclined to move in that direction without this initiative.

KFW: Compared to other projects I've been involved in, the WTIS was much more intense and had the added pressure of being implemented within very short timelines.

**"The WTIS was a focused project with very tight timelines that could not be missed. As one of the Beta hospitals, we had a very strong sense of teamwork because we were playing a big role in providing input for future phases."**

**IN: What challenges did you face in managing the WTIS project at the hospital level?**

JC: There were several significant challenges to overcome. The first was in ensuring timely and practical communication to all parties and departments involved. This included surgeons' offices – some that didn't necessarily use email or voicemail; individuals in various departments who faced potential workflow changes; responding to clinical questions while answers were still being developed; and keeping senior management up-to-date on progress. We also had to overcome the perception that this was a non-critical care project, which meant providing and regularly repeating benefit statements from the perspectives of the hospital, surgeon offices and patients.

Also, as implementing Internet connectivity was a hospital responsibility, we faced some challenges in gaining access to

---

IN = Interviewer    JC = Jenny Cockram    KFW = Keary Fulton-Wallace

physician offices and resourcing for this in terms of people and equipment.

KFW: Our initial challenges were very similar to the above. With very limited resources, we faced tight timelines for deliverables. Ensuring enough information technology support within our hospital was particularly challenging. Working directly with surgeons and their offices was also a challenge, including persuading them to support and participate in the initiative. As the project team was also learning along the way, there were challenges at times in getting consistent and timely responses to clinical questions.

When surveyed for Lessons Learned at the conclusion of Phase III in March 2007, Hospital PMs reported on their experiences in deploying the WTIS:

- 80% had worked with other hospitals in their local health integration network (LHIN), either formally or informally.
- 92.9% reported that they were adequately supported by their dedicated WTIS Site Leads; 100% reported using their Site Leads to stay up-to-date on project activities.
- 78.5% had used the online collaboration tool to stay up-to-date with the project.
- 58.5% reported that the project training materials (Super User, Train-the-Trainer, WTIS Coordinator) were appropriately timed to provide stakeholders the necessary technical background and reporting skills for a successful go-live.
- 65.5% agreed that the testing support from the WTIS project team was adequate.

The WTIS project team's efforts to incorporate Phase II feedback into Phase III resulted in significant improvements:

- 62.1% of Hospital PMs agreed they had enough resource support at their hospital to deploy the WTIS and/or EMPI systems (compared with 29% in Phase II).
- 58.6% felt that project timelines were adequate for hospital teams to complete deliverables (compared with 19% in Phase II).
- 79.3% agreed that communications were easy to understand (compared with a previous 49%).

**IN: What aspects of the WTIS deployment approach were most helpful to your hospital achieving success?**

JC: The WTIS project team allowed for flexibility in understanding and supporting hospitals in dealing with local needs. A large part of this was accomplished with an effective support model. Having single points of contact and providing clear points of communication meant that hospitals knew where to

turn for information. It also allowed the WTIS project team to understand unique hospital challenges. Because hospitals were grouped together based on similarities, there were opportunities to learn from one another and work together.

**“Compared to other projects I’ve been involved in, the WTIS was much more intense and had the added pressure of being implemented within very short timelines.”**

Tools to support deployment and communication, such as newsletters, indicator reports to monitor weekly progress and project plans, were also well received. These were a complement to a support model that allowed hospital project teams to stay focused and to a certain extent set their own deadlines within the key project timelines.

KFW: The WTIS project team supported us by providing lots of helpful material (although at times it was a bit overwhelming) and by making subject matter experts available to hospitals throughout the project.

**“Project teams should also ensure they have ways of gathering input from those doing more of the day-to-day work, ensuring a better understanding of workflow requirements and internal workings of hospitals.”**

**IN: What should healthcare IM/IT projects consider in order to improve deployment experiences in the future?**

JC: Do not assume all hospitals have the same level of support from senior management teams. Helping hospital teams maintain executive support is critical. Project teams should also ensure they have ways of gathering input from those doing more of the day-to-day work, ensuring a better understanding of workflow requirements and internal workings of hospitals. Also, projects should provide a robust system for sharing and storing information centrally; email can become unruly.

KFW: Project teams should consider involving a range of hospital staff in the first round of data gathering rather than relying solely on physician input, as physicians do not always understand the details of internal office processes. I would also

suggest that projects provide more opportunities for hospitals to share “best practice” methodology with each other to avoid re-inventing the wheel.

The two Hospital PMs interviewed for this commentary offered the following advice for PMs involved in future healthcare IM/IT projects at the regional or local levels:

- Communications should be ongoing and should highlight the short- and long-term benefits to all stakeholder groups throughout the project.
- Establish a local project steering committee with strong representatives from each affected area to ensure buy-in from senior management and clinicians.
- Don't assume anything, and don't be afraid to ask questions: you may be surprised at how many others are wondering the same thing... and at the answers you get!
- Ensure there is a process for getting timely responses to questions and, in turn, have a clear process in place to get your hospital stakeholders the information they need.
- When working with physicians, be sure to include their administrative staff in planning.
- Ensure test plans reflect real-life situations, and identify which teams and systems need to be involved in testing at the beginning so that resources can be secured as early as possible.
- Think about the IM/IT system as an integrated solution to reduce duplication of data entry for hospitals and clinicians.
- Collaborate and learn from others. Most hospitals are willing to share information and experiences. Don't be afraid to ask peers how they handled their implementation and what were their lessons learned.
- Ensure you have adequate clinical support from the beginning of the project.

### About the Authors

**Jenny Cockram** is an independent consultant specializing in e-Health solutions, bringing technology and people together. She was the overall Project Manager to Grand River Hospital during the Beta Phase of the WTIS project and became an advisor for the WTIS project for subsequent deployment and expansion.

**Keary Fulton-Wallace** is the Performance Management and Wait Time Coordinator for the Huron Perth Healthcare Alliance. She has been active in the Performance Management and Utilization community since 1990. She currently sits on the Wait Time Data Quality Working Group for Cancer Care Ontario.

# Building a Sustainable System: The Making of the WTIS

Steve Hall, Rami Thabet and Mark Dummet

## Introduction

Building Ontario's Wait Time Information System (WTIS) was one of the largest and most complex technology projects Cancer Care Ontario (CCO) had ever taken on. Increasing public concern about wait times and the lack of adequate tools to provide a clear or accurate picture of provincial wait times had led to a sense of urgency for the province to report wait time data. While healthcare providers and the Ministry of Health and Long-term Care (MOHLTC) sought to address timely access to care, the challenges to develop a suitable information management/information technology (IM/IT) solution within aggressive timelines were significant. For the WTIS project, success was defined by the ability to deliver a tool to capture wait time data that addressed business and clinical needs and by providing individuals with the ability to use the tool and its data to improve access to care.

Specifically, the WTIS was developed for use by hospitals and clinicians – already facing significant change and with little capacity to spare – working to support MOHLTC's broader transformation agenda and adjusting to the introduction of Local Health Integration Networks (LHINs). The WTIS had to integrate with numerous technically diverse hospital systems while supporting a province-wide e-Health strategy still in its infancy.

This article examines the approach that the project used to drive, develop and deliver an IM/IT solution that met business and clinical needs, and shares lessons learned in delivering a province-wide technology application.

## Use the Business Imperative to Drive Technology

For an IM/IT solution to be effective, it must address a clearly identified business/clinical problem. The goal of the Wait Time Strategy was to reduce wait times and improve access to care. The wait time problem was largely seen as an information problem, and the WTIS was built to capture and report on wait time data. With that goal in mind, the project set out to develop a clear picture of how to effectively measure wait times and identify what information would best drive performance management.

## For an IM/IT solution to be effective, it must address a clearly identified business/clinical problem.

With short time frames to develop and deploy the WTIS, requirements gathering had to be swift and thorough. Recognizing the value and importance of user insight, Clinical Expert Panels (CEPs) and hospital stakeholders were consulted early in the process, allowing the WTIS project team to better understand the clinical landscape and business requirements.

The WTIS project team held ongoing stakeholder sessions to collect and prioritize the business/clinical requirements. With stakeholder input, the project team then determined the technical and functional requirements that shaped the development scope. Through these sessions, the team identified that the WTIS would need to provide wait list management

information at the clinician, service type and hospital levels. By answering the following questions, the WTIS would allow informed decision-making:

- Who is waiting for which surgeon for which procedure?
- How will urgency be determined?
- How many people are waiting?
- How long have people been waiting?
- How long have people been waiting compared to a target time?

The WTIS project team also worked with its partners in MOHLTC, the Institute for Clinical Evaluative Studies (ICES), the Canadian Institute for Health Information (CIHI) and the Ontario Hospital Association (OHA) to understand their data needs and ensure that the system would appropriately address data standardization and quality requirements.

## The wait time problem was largely seen as an information problem, and the WTIS was built to capture and report on wait time data.

Through this consultative process the project team was able to establish the requirements that would guide development of the WTIS. The team was able to identify the information and processes needed to measure wait times, as well as the specific technology to prioritize patients, and describe the key business processes and workflow scenarios to drive the system design process.

### Lay the Foundation for Technology

With many priorities competing for attention and limited resources (people, time, equipment and funds) it was critical that hospitals and clinicians felt incented to deploy and begin using the WTIS. The following were essential to the project's foundation.

### Make the Case for One System

Through Hospital Accountability Agreements, funding was married to wait time data collection and provided the impetus for hospitals to deploy the WTIS and work to ensure clinicians were all using one system to capture wait time data. To receive the initial incremental funding, hospitals were required to meet conditions of funding that included performing additional processes, meeting targets and collecting, reporting and using wait time data to govern their organization's access management strategy.

### Standardize Data and Data Collection

A key challenge for the WTIS project team was the lack of national or provincial standards to define acceptable wait times. As a result, hospitals and clinicians were limited in their ability to use technology to effectively monitor and manage performance. Clinicians and hospital stakeholders, represented by Clinical Expert Panels, agreed that this information was critical to their practices and to addressing the wait time issue. The promise of wait time definitions, and a consistent standardized manner to collect data electronically and in near real-time, provided further incentive and established the foundation for the WTIS.

### Demonstrate the Value of Data Early

While work was underway to develop the WTIS, the MOHLTC was committed to begin public reporting as soon as possible. As a result, in April 2005, CCO led an initiative to develop and deliver an interim upload tool for wait time data collection using its existing IT infrastructure. Based on their readiness and willingness to begin capturing data monthly, five hospitals were chosen as Beta sites to begin using this basic reporting system. Eventually, all wait time-funded hospitals would use the tool to capture their wait time data until the WTIS was developed and deployed.

To use the interim upload tool, dedicated resources, time commitment and training would be required. The project took a calculated risk: if hospitals found the process cumbersome or the extra work an imposition, support for the WTIS could be eroded. However, the initial data collection actually helped "prime the pump." Hospitals quickly began using the data and saw its potential to inform process, policy, priorities and wait list management. It was a turning point that helped smooth the way for future acceptance of the WTIS.

### Establish Checkpoints to Ensure Data Quality

The interim upload tool also provided valuable insights about data integrity and the process of data capture in hospitals, helping shape the future requirements, development and evolution of the WTIS. Questions were raised about data quality checks and validation to ensure complete and accurate data, and decisions had to be made about how to best analyze outliers, deal with trending across time and address cases with extremely long wait times. This was also the beginning of a rigorous data quality process that would include the creation of a Data Certification Council to provide third-party validation of data quality. With such powerful information being reported publicly, the stakes were high in ensuring the accuracy of the data.

### Secure e-Health Expertise

Given the importance and aggressive timelines of the project, CCO assembled best-in-class vendors who worked alongside CCO resources to create a team with broad expertise and knowledge. CCO's experience in complex technical health-

care initiatives and an understanding of hospital and clinician communities was critical to enable delivery of a technical solution within aggressive timelines. Because a key strategy was to align the WTIS with other relevant provincial e-Health strategies, e-Health expertise was extremely important.

The project resourcing strategy aligned vendor resources to work closely with the CCO technical and business leads and ensured that both CCO's technical expertise and the knowledge gained during the system design and development was transferred and shared. Rather than operating "virtually," the team was co-located at CCO's premises. A collaborative "one team" approach rapidly emerged, allowing CCO and vendors to work closely on requirements and have both the information and authority to make decisions quickly. The one team approach is further discussed in "Taking it to the Streets: Delivering on Deployment" on page 30.

**With short time frames to develop and deploy the WTIS, requirements gathering had to be swift and thorough.**

#### **Manage and Mitigate Privacy and Security Concerns**

From the outset, the team had to address issues of privacy and security relating to the collection, use and disclosure of patient health information. As a recognized and prescribed entity under *Ontario's Personal Health Information Protection Act* (PHIPA), CCO was known within the healthcare sector for its privacy program, experience and approach. A security-threat risk assessment was also completed. The project leveraged CCO's existing secure hosting environment to reduce the number of security issues that might arise.

A WTIS privacy impact assessment (PIA) was completed early on in the project. Recommendations were implemented to develop a comprehensive strategy to address and mitigate privacy concerns. CCO liaised with the Information and Privacy Commissioner/Ontario to ensure that the PIA results and the privacy governance structure put in place to protect the personal health information that would be collected, used and disclosed via the WTIS were aligned with provincial privacy best practices.

CCO's approach required all third-party vendors working on its behalf to act as "privacy" agents of CCO in their dealings with hospital stakeholders. Vendors undertook responsibility for understanding and complying with CCO's privacy requirements. Many privacy concerns were overcome through deployment activities such as teleconferences, ongoing communication and training materials the project team provided to support hospitals in bringing clinicians on board. Most importantly, privacy issues were not seen as obstacles, but rather as enablers to the proper sharing of information between systems and organizations.

#### **Build the Systems**

The following considerations were essential in building the WTIS and Ontario's Client Registry/EMPI.

#### **Leverage Existing Knowledge and Expertise**

The team had to decide what systems model to adopt for the WTIS. In defining project scope and, ultimately, product definition, two possible options were considered:

1. Customize an existing "Wait Times" application to meet the requirements of the WTIS, or
2. Deliver a custom-built solution.

At the time, very few province-wide systems were in operation to leverage or learn from. In Ontario, the team learned from the work of the Cardiac Care Network (CCN). However, the CCN model was specific to cardiac care, whereas the objective for the WTIS was to eventually capture all surgical procedures performed in Ontario.

Nationally, the team looked to other jurisdictions to examine other provincial wait time efforts from the perspective of standardization, implementation, governance and management. One leading example was found in Saskatchewan with the Saskatchewan Surgical Care Network (SSCN). While the project team discovered insights through examining this initiative, key distinguishing requirements such as clinician connectivity, user registration, reporting and integration indicated that Ontario's WTIS required a custom-built solution to deliver a sustainable system and meet the unique requirements of Ontario's healthcare stakeholders.

#### **Clearly Define Scope and Business Requirements**

Ongoing stakeholder consultations defined the scope and requirements for core WTIS functionality. Initially, a key metric, the "Wait 2" period – the time between the decision to treat and actual provision of the treatment – would be tracked, monitored and reported. Based on this experience, the intent was to deliver a solution with the capacity to eventually capture the full spectrum of a wait.

It was important to engineer a system that allowed for straightforward adaptability by hospital platforms and workflows. The main development priorities were to build a system that (1) focused only on collecting the data needed to capture the "Wait 2" metric, (2) would work with hospitals' existing technical infrastructure, (3) stakeholders would find relatively easy to use, and (4) appropriately addressed privacy and security issues. The system had to remain adaptable, align and use HL7 (international standards used to exchange, integrate, share and retrieve electronic health information known as Health Level Seven) messaging standards and be built in a manner that would provide integration capability and scalability with future needs and investment.

Scalability was also important to ensure the system could evolve to handle a larger load as additional clinicians used the system and to meet changing business requirements, such as adding new procedures and eventually encompassing all aspects of the wait.

Once the requirements were developed, they were rigorously tested against defined evaluation criteria. These included hospitals being able to successfully send HL7 messages to the WTIS and ensure that hospital procedures mapped to WTIS procedures. In addition, hospitals had to review and/or adjust their business processes and workflows to ensure the application design met stated objectives and allowed end users to successfully open and close wait list entries.

**In April 2005, CCO led an initiative to develop and deliver an interim upload tool for wait time data collection using its existing IT infrastructure.... Eventually, all wait time-funded hospitals would use the tool to capture their wait time data until the WTIS was developed and deployed.**

**Seek Opportunities for Agility**

In building such a complex and large-scale system, the WTIS project team “expected the unexpected” and proactively looked for opportunities to increase their agility. A few factors helped ensure the project team built capacity and could rapidly and

effectively respond to IT changes and decisions throughout the WTIS project:

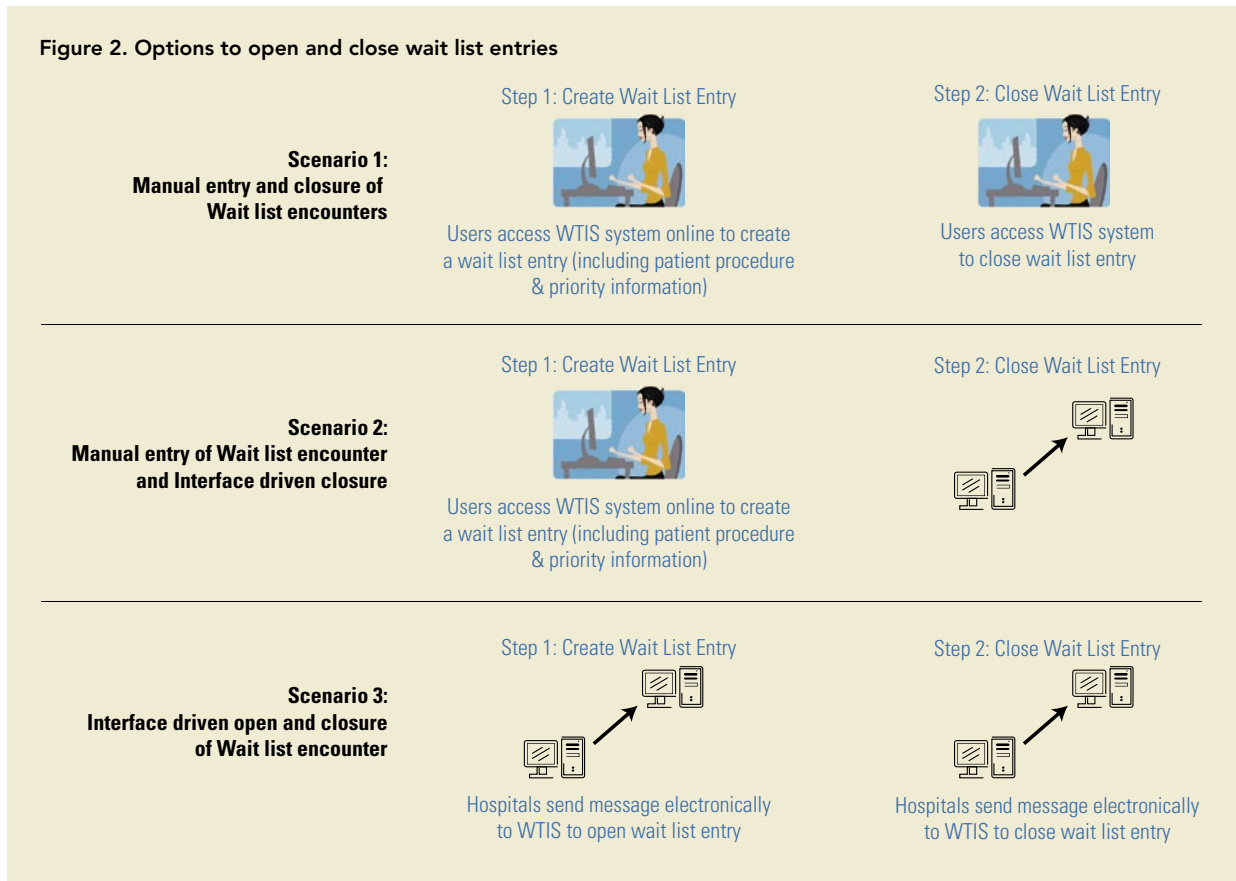
1. User registration – In addition to the registration that occurred within CCO, external new users were required to register with the WTIS separately. In response, a user registration and management process was developed, introducing local registration authorities. The new process easily registered hundreds of users at a time, a much more efficient undertaking for both hospitals and CCO.
2. Hosting – Each instance of the WTIS required a larger number of servers. A virtual server strategy was undertaken to allow rapid buildup and deployment; it also enabled extensive quality assurance (QA, focused on data, user acceptance and development).
3. An iterative approach – The WTIS project employed multiple builds of applications, as opposed to single large builds. The decision to use a phased implementation approach provided the project team with clearly stated objectives for each phase. This demanded focused and concise project management and an iterative software development approach. Each phase, through a better understanding of enhancements requested by users, delivered enhanced functionality that refined the system (Figure 1).

**The Need for a Client Registry**

Introducing the WTIS system hastened the development and deployment of another province-wide system, Ontario’s Client Registry/Enterprise Master Patient Index (Client Registry). A cornerstone for e-Health in the province, the Client Registry

**Figure 1. Timeline of the evolution in WTIS functionality**

Timeline	Number of Hospitals	Functionality
Phase I/Beta – March 2006	5	<ul style="list-style-type: none"> <li>• Core WTIS functionality available to collect data for cancer surgery, cardiac procedures, cataract surgery, hip and knee replacements surgery and CT and MRI scans</li> <li>• One-way integration with Ontario’s Client Registry/EMPI</li> </ul>
Phase II – November 2006	53	<ul style="list-style-type: none"> <li>• WTIS functionality available to additional hospitals</li> <li>• Bi-directional integration between WTIS Client Registry/EMPI</li> </ul>
Phase III – June 2007	81	<ul style="list-style-type: none"> <li>• WTIS functionality available to all wait time-funded hospitals</li> </ul>
WTIS Expansion 2007/08 – March 2008	82	<ul style="list-style-type: none"> <li>• System expanded to collect data for all general, ophthalmic and orthopaedic surgical procedures</li> <li>• Pilot functionality to capture Wait 1 data</li> <li>• Pilot functionality to capture paediatric procedures</li> </ul>
WTIS Expansion 2008/09 – March 2009	86	<ul style="list-style-type: none"> <li>• System expanded to collect data for all adult and paediatric procedures</li> </ul>



identifies individual patients within and across hospitals. It was introduced concurrently with the WTIS because it provides the engine that allows patients on multiple waiting lists for the same procedure to be correctly identified, preventing duplication. Accurately tracking these individuals is important for maintaining data integrity and measuring true wait times. Consequently, the Client Registry became part of the WTIS rollout.

The WTIS is a custom-built .NET application. Custom-built integration code, designed to help integrate data from disparate sources and enable HL7 message transfer from multiple hospital interfaces, was provided by a third-party vendor. Data can either be entered online, via a standard web browser, or submitted electronically, through a hospital, using HL7 web-browser messaging. At a local level, hospitals determine how they open and close their wait list entries. The scenarios are identified in Figure 2. A central server at CCO acts as the database and stores all required wait time data.

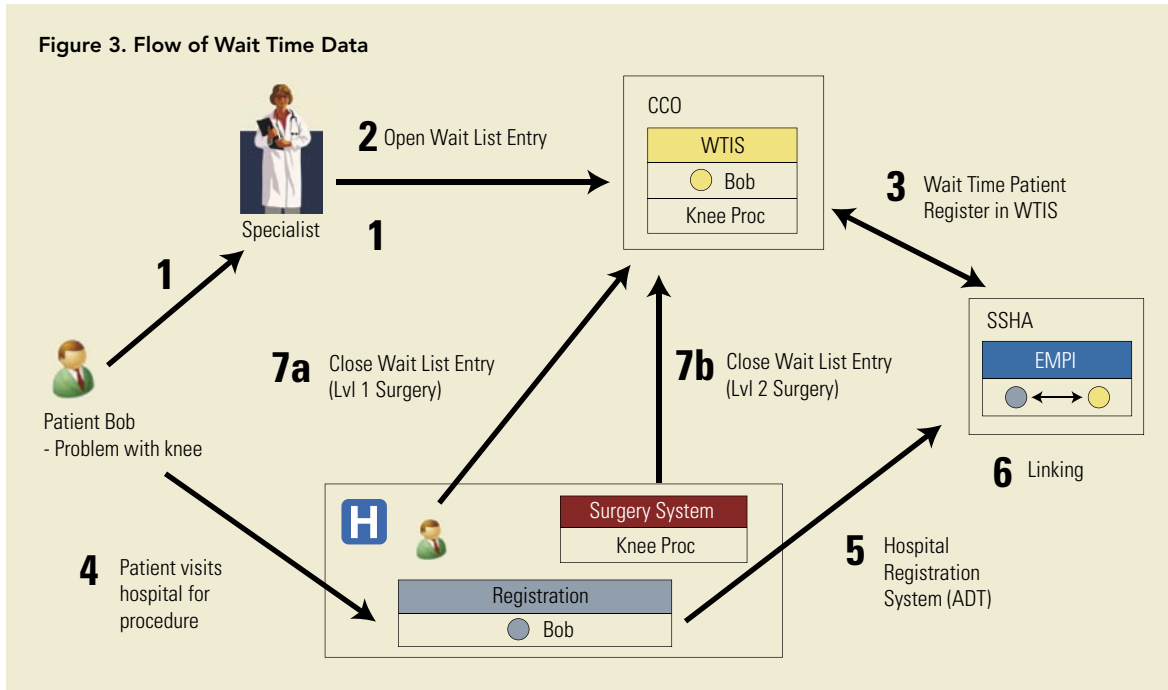
The Client Registry's architecture permits integration with the WTIS, hospital systems and other provincial e-Health systems. Hospitals can submit patient information electronically to the Client Registry through a standard interface over a secure network connection. Patient information is then stored

in databases. The WTIS and the Client Registry are connected over a secure sockets layer virtual private network (SSL VPN) connection that provides message security in environments where trust is an issue, across a managed private network. The two applications communicate over specific application program interface (API) calls that pass patient information between the two systems. In other words, access is simple, security is high and the systems can easily talk to each other. CCO hosts the WTIS, and the Client Registry, initially the responsibility of CCO, is now hosted by the Smart Systems for Health Agency (SSHA, now a part of e-Health Ontario).

### Leverage Local Resources for Local Solutions

Rather than customize a solution for every hospital, the project team delivered a flexible platform that allowed for a local integration solution led by hospital IT professionals who could determine how best to adapt their systems to enable connection with the WTIS.

Clinicians would connect to the system directly from their offices using standard Internet protocols to ensure timely, accurate and near real-time capture of wait time data. Data capture at source minimized concerns about the impact of time delays and



inaccuracies due to human error on data quality (e.g., interpretation of handwritten notes), and clinicians would have direct access to their wait list information for managing their wait lists.

**Integration – Building on New and Existing Systems**

Over time, the project team gained a solid and growing understanding of the various hospital systems, workflows and integration capabilities. This learning was critical in ensuring that, wherever possible, data available in other information systems would not be re-entered in the WTIS. An integrated WTIS/Client Registry solution ensured that the data-entry process was streamlined and enabled system consolidation and reconciliation of duplicate wait time entries.

Hospitals defined their integration requirements based on one of three levels: basic, standard or complex operating room (OR) integration. A custom-built integration engine enabled WTIS integration with hospital systems through a secure exchange of HL7 messages between hospital systems and the WTIS and HL7 adapters. Figure 3 shows the entry and flow of information between the WTIS and integrated hospital systems, involving the case of a sample patient.

**Supporting Hospital Transition to the WTIS**

Numerous supports and tools helped hospitals, their staff and clinicians in meeting the technical requirements of the WTIS. The project team highlighted key technical milestones, testing requirements, due dates and completion status for each participating hospital, tracked using the Indicator Report.

Key technical milestones included procedure mapping and

conformance testing for go-live. Procedure-mapping exercises would match WTIS procedure codes to codes used by the hospitals’ systems. This exercise was essential to the success of HL7 interface messages, which would be used to submit, open, modify or close wait list entry messages between the hospital system and the WTIS. Extensive conformance-testing activities were required to ensure hospital wait list data submissions complied with specified WTIS standards. This was key in validating that interface messages met current WTIS HL7 specifications and business rules. Issues with procedure maps or hospital interface customization were identified and resolved early, prior to deployment. Hospital operating room and decision support resources worked with hospital IT and project team resources to refine interfaces, ensuring their readiness for WTIS deployment.

**With such powerful information being reported publicly, the stakes were high in ensuring the accuracy of the data.**

Given that hospitals had different levels of technical ability and IT support, the project team’s technical resources, working with the Site Leads, provided ongoing support to hospital technical teams to ensure an appropriate understanding of WTIS deployment requirements. Teleconferences and checkpoints were scheduled for information exchange and to provide opportunities for hospitals with similar systems to problem-solve among each other. Pre- and post go-live support was also available.

### Lessons Learned

1. **Leverage existing knowledge and expertise** to help define the technology.
2. **Take a cross-functional view (not just technical view) of decision-making** to enable quick resolutions that consider all impacts to stakeholders.
3. **Consult with clinical leads early** in the process. Ensuring end users become partners in the initiative will result in a greater likelihood of IM/IT success and buy-in.
4. **Execute repeated dry runs, supported with input from all project work streams**, to establish roles and responsibilities, identify risks early and streamline the go-live process.
5. **Work as “one team”** (no matter how many vendors are involved) to ensure a cohesive approach to product development and deployment.
6. **Use an iterative development approach** to foster the team commitment and focus required to deliver a product within aggressive timelines.
7. **Establish clear and definitive feedback mechanisms** to evolve the system in line with user and changing business requirements.
8. **Establish a strong technical support model** during and post deployment to effectively escalate and resolve issues in a timely and positive manner.
9. **Conduct a rigorous testing program** to identify risks early and resolve defects. This, in turn, delivers a product that minimizes business impact on go-live and builds credibility and trust in the overall process.
10. **Establish a privacy governance structure** to mitigate and manage privacy concerns.
11. **Provide opportunities for integration**, as adoption and sustainability are enabled if existing systems can be integrated with new ones.

### Assuring Quality of Delivery

Well-defined processes were put in place to ensure each WTIS rollout was delivered to meet stakeholder needs and expectations, as well as ensure the appropriate level of support to hospitals.

### Provincial Testing Program

The WTIS and the Client Registry had different and unique success criteria for testing. WTIS testing involved extensive hospital conformance testing activities to ensure that HL7 messages would successfully pass between the WTIS and hospital interfaces.

Building upon the initial testing program, the project team used specialized automated testing to augment the rigour and speed of the initial manual testing programs. This enabled greater breadth of functionality and accelerated release development and deployment cycles. Automated testing provided flexibility, while

reducing overall risk. It was valuable in managing user expectations by identifying and addressing performance issues, thereby delivering a more stable product to hospitals. It also allowed the project team to gain the confidence of the hospitals, which understood that a release would not be deployed unless it conformed to their environments, workflows and business processes. Details of the application testing success factors can be found in “Key Success Factors for Testing the WTIS” on page 50).

**CCO’s experience in complex technical healthcare initiatives and an understanding of hospital and clinician communities was critical to enable delivery of a technical solution within aggressive timelines.**

### Process and Practice: Run Book and Dry Runs

Detailed run books (a written set of technical procedures) and dry runs for the WTIS’ promotion to a live environment were an important element in the go-live process. Repeated dry runs were conducted via daily run book meetings leading up to the go-live, identifying issues and risks and providing predictability. The run book highlighted every step and detail of the work to be completed and assigned responsibility for each element.

Where run book exercises usually involve only technology resources, the WTIS project made the decision to include resources from other work streams, including communications, deployment and the CCO operations team, as well as representation from Ontario’s Client Registry operations team. This meant all scenarios were included and a comprehensive plan was in place to reduce risk and ensure each participant was clear on role, responsibilities and timing. Any issues or risks found triggered a series of escalations that, within hours, could resolve the situation or result in the project sponsor calling a delay. Supporting communications and back-out plans were also developed in case a release or rollout was rescheduled.

### Dashboards

Dashboards, like the Indicator Report for hospitals, provided snapshots of technology activity status. Although dashboards were internal tools, they helped the project team track progress to ensure that once live in hospitals, the WTIS would perform as planned. Dashboards were shared with key stakeholders, and they required multiple approvals before a decision to deploy or delay an application release was made. This ensured that cross-functional risks and impacts were considered, with clear criteria to determine whether or not the provincial team could or should proceed with next steps.

Before a go-live date, dry runs using the application in an environment that mimicked each hospital production environ-

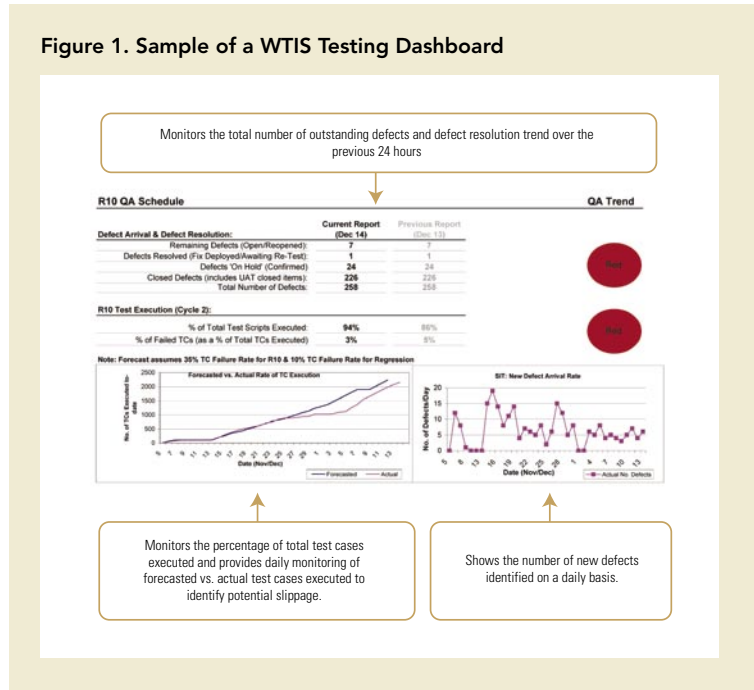
# Key Success Factors for Testing the WTIS

As information technology continues to be deployed within the healthcare system, healthcare and IT professionals need to be aware of the risk associated with these systems. WTIS's mitigation strategy in this case included the investment in an independent professional testing and verification capability. This capability was configured to manage multiple test phases, meet aggressive project timelines and deliver a high-quality product to hospitals.

## About the Author

**Harbir Singh**, MBA, is a Consultant with xwave, a division of Bell Aliant. She specializes in the design and management of independent test and verification programs for information technology applications in healthcare.

Figure 1. Sample of a WTIS Testing Dashboard



Success Factor	Description	Benefits
<b>Effective, Independent Testing Model</b>	<p>With in-depth knowledge of WTIS requirements, Cancer Care Ontario (CCO) worked closely with a quality assurance and testing vendor to develop a plan to execute a robust and iterative testing program.</p> <p>This model included remote testers (near-shore testers) who automated and executed tests that were then validated by the local team.</p>	<p>Delivers an independent and comprehensive quality assurance testing program that reduces risk associated with the WTIS application while meeting the requirements of the WTIS project.</p> <p>Segments roles and responsibilities to deliver cost efficiencies and provides the flexibility and expertise required to deliver a stable product within aggressive timelines.</p>
<b>Automated Regression-Testing Tools</b>	<p>A testing tool to automate regression tests was introduced.</p> <p>Regression tests ensure that existing system functionality has not been "broken," based on modifications made during a release.</p> <p>At the time, automated testing tools were considered innovative in healthcare IM/IT system deployment.</p>	<p>Ensures appropriate test coverage, while augmenting the rigour and speed of manual testing programs.</p> <p>Regression testing is typically repetitive, labour intensive and prone to human error. Automation of these tests made the testing of new releases more efficient and accurate.</p> <p>Once up and running, automation greatly streamlines regression testing. More importantly, it allows managers to re-run automated regression tests to validate an unplanned fix mid-cycle – an otherwise significant impact to cost and schedule under traditional manual methods. In Phase III, automated testing reducing the amount of time spent on execution of tests by 87%.</p>
<b>Automated Performance Testing Tools</b>	<p>Performance testing tools imitate production system usage and simulate a large number of people using the system simultaneously.</p>	<p>Enables observation of system behaviour under a similar amount of stress/load to what would be encountered in the production system.</p> <p>Early identification and management of performance issues ensures delivery of a more stable product to hospitals and enhances credibility.</p>
<b>Daily Tracking and Reporting</b>	<p>Defects were reviewed daily with the development team and requirements team, and issues/risks that could impact release timelines were escalated as soon as they were identified.</p>	<p>A daily "dashboard" to display progress at a glance proved to be a very effective tool for communicating progress and status and identifying risks during testing. (Figure 1)</p>

ment assured that hospital systems would not be negatively impacted at go-live. Any impact would trigger a “go/no go” decision.

### **Evolving the WTIS**

As with any system, user feedback was critical to evolving the WTIS. A regular release management program allowed the project team to maintain focus on priorities and ensure successful deployment within stated timelines. A quarterly release strategy was implemented, and requirements were prioritized into major and minor releases. Major releases would deliver mission-critical requirements, enhancements and functionality, while minor releases would focus on less critical, “nice to have” functionality.

**Indeed, much of the success of the WTIS project can be attributed to the fact that the application was built by clinicians for clinicians.**

This release strategy, used throughout each phase, delivered many advantages. It focused the development lifecycle on clearly stated objectives, aligned the project team and hospital stakeholders in an increased level of interaction, minimized schedule slippage and ensured that the WTIS was deployed with minimal impact to business operations. It also managed stakeholder expectations and change requests, since stakeholders understood that the quarterly release cycle provided ample opportunities for system upgrades.

Post go-live support was available to support business users through a formalized help desk model, which ensured business and technical issues were addressed in a timely and useful manner. User feedback has played a critical role in improving help desk support. For example, the service window was expanded from 9 a.m. to 5 p.m. to 8 a.m. to 8 p.m., based on user feedback, to ensure the appropriate level of support was available to WTIS users.

The WTIS has moved from project to product and is now in the hands of the operations team at CCO, which manages and supports its evolution and maintenance through product and release management. As of March 2009, the WTIS is on version 12 of the application, an indication of its ability to evolve and meet the needs of its users.

Clinical Leads remain engaged and continue efforts to expand the WTIS to report on all surgical procedures. User feedback enabled CCO to build a more robust technical infrastructure to maintain a high-performance system and support WTIS expansion. Indeed, much of the success of the WTIS project can be attributed to the fact that the application was built by clinicians for clinicians.

### **About the Authors**

**Steve Hall** is the Chief Information Officer (CIO) at the William Osler Health Centre. Previously Steve was the Chief Technology Officer and Director of Information Technology at Cancer Care Ontario and played a key role in the initial development of the Wait Time Information System.

**Rami Thabet** is an independent consultant with experience on transformative IM/IT initiatives in the financial services, telecommunications and health care sectors. Rami led the implementation of Ontario’s Wait Time Information System and the Provincial Client Registry/Enterprise Master Patient Index.

**Mark Dummett** is a Senior Executive within Accenture’s System Integration and Technology practice. Mark specializes in implementing solutions that address business issues across many industries including healthcare.

In Ontario people also line  
up to get **out** of the hospital.

The **solution** is at our doorstep.  
Join us in taking the first step.

## Alternate Level of Care Definition for Ontario

The healthcare system aspires to deliver care in a setting that is congruent with the clinical needs of a patient as defined by the patient's health status, treatment plan and goals. The definition applies to all patient populations waiting in all patient care beds in an acute or post acute care hospital in Ontario.

**ALC** (eh el see) *n.* When a patient is occupying a bed in a hospital and does not require the intensity of resources/services provided in this care setting (Acute, Complex Continuing Care, Mental Health or Rehabilitation), the patient must be designated Alternate Level of Care (ALC)<sup>1</sup> at that time by the physician or her/his delegate. The ALC wait period starts at the time of designation and ends at the time of discharge/transfer to a discharge destination<sup>2</sup> (or when the patient's needs or condition changes and the designation of ALC no longer applies).

## ALC: some fine print you need to know

### Note 1

- The patient's care goals have been met or
- Progress has reached a plateau or
- The patient has reached her/his potential in that program/level of care or
- An admission occurs for supportive care because the services are not accessible in the community (e.g. "social admission").

This will be determined by a physician/delegate, in collaboration with an interprofessional team, when available.

### Note 2

Discharge/transfer destinations may include, but are not limited to

- home (with/without services/programs),
- rehabilitation (facility/bed, internal or external),
- complex continuing care (facility/bed, internal or external),
- transitional care bed (internal or external),
- long-term care home,
- group home,
- convalescent care beds,
- palliative care beds,
- retirement home,
- shelter,
- supportive housing.

This will be determined by a physician/delegate, in collaboration with an interprofessional team, when available.

### Final Note:

The definition **does not** apply to patients:

- waiting at home,
- waiting in an acute care bed/service for another acute care bed/service (e.g., surgical bed to a medical bed),
- waiting in a tertiary acute care hospital bed for transfer to a non tertiary acute care hospital bed (e.g., repatriation to community hospital).

Questions - Contact [ALCdefinition@cancercare.on.ca](mailto:ALCdefinition@cancercare.on.ca)

# Lessons Learned for Local Solutions

Glen Kearns and Gino Picciano

**T**he WTIS project delivered a provincial platform that was flexible enough to allow local integration by each participating hospital. As a result, local efforts were led by hospital IT professionals who could best determine how to adapt their systems to enable connection with the WTIS. Here, two hospital executives share their thoughts on their local experiences.

**IN: What challenges do healthcare providers face when deploying an IM/IT solution?**

GK: The biggest challenges are dedicating the time and resources to focus on change-management and business process redesign, ensuring there's a robust project management structure with strong communication functions, and maintaining a patient focus at the centre of the project.

GP: Generally, the challenge in implementing a new IM/IT solution in healthcare is not the technology itself, but rather the integration of the solution with multiple pre-existing business processes. In a multi-site facility, the variation in process between different operating room (OR) sites is significant, especially at the detailed process level. The WTIS was deployed to 150+ surgeons' offices at The Ottawa Hospital, each with unique pre-surgical booking and consultation record-keeping practices that did not necessarily align with the required WTIS business process.

Obtaining and sustaining a satisfactory level of end user support for the system is another common challenge, as technology is increasingly being introduced into the organization. Often, the necessary resources are allocated for the develop-

ment and implementation phases, but determining and making provision for ongoing maintenance resources frequently remains a challenge.

Government-mandated IM/IT solutions can be challenging because they are not usually the product of internal or end user requests. As a result, challenges arise in staying up-to-date with ongoing changes and communicating the changes and system benefits. The short turnaround times or inopportune timing for the organization can be problematic.

**IN: Do you feel the common challenges were addressed in the development and deployment of the WTIS?**

GK: The challenges were addressed to the gold standard level. As we were part of the Beta group, the provincial project team spent time at our site reviewing our existing processes related to OR booking. This allowed us to be proactive in our approach and complete some activities prior to implementation.

The formal project management methodology was also outstanding. Project team roles were clearly defined and a formal communications strategy ensured that regular, timely information and progress updates were delivered in useful formats. For example, the project dashboards were invaluable to track progress and issues.

Improving access to key services for patients was always at the forefront of our work. The ongoing feedback from the project team on our current state and future deliverables provided the momentum to drive our team to achieve project milestones, while ensuring that the patient remained the focus of the project.

IN = Interviewer    GK = Glen Kearns    GP = Gino Picciano

GP: The initial WTIS deployment was managed by our IS/IT department with dedicated project management, system analyst and administrative support. The WTIS team's implementation approach ensured high-quality development of resource tools, management of timelines, and investigation, documentation and resolution of both business process and technological impacts of the new system prior to implementation. Assigning a dedicated WTIS coordinator at our hospital to provide system users ongoing support before, during and after WTIS implementation was critical. Our WTIS coordinator became fully immersed in the details and ongoing operation of the system, gaining a full understanding of the workflow associated with the new system to manage ongoing system expansions. The coordinator successfully developed relationships with surgeons and end users, monitoring compliance and maintaining regular two-way communication about system improvements.

The continued leadership of our Surgical department, division heads and senior management greatly contributed to achieving success in business process redesign, implementation and usage of the WTIS.

**IN: What measures did you/your hospital take to ensure the WTIS was successful?**

GK: To ensure success for the WTIS, we:

- developed a steering committee comprised of senior leaders including the Executive Vice-President, Chief of Staff and Chief of Surgery;
- assigned dedicated hospital resources to the WTIS project;
- deferred other internal IM/IT projects;
- obtained strong support from hospital decision-support staff to communicate progress and changes internally; and
- made sure all clinicians received individual attention, and provided computers and on-site technical support, as required.

GP: To ensure that the WTIS was successful, we insisted that all staff comply with the WTIS project requirements and complete all related activities according to plan. We employed a near closed-loop process, with daily oversight and review on all levels.

**IN: Now that your hospital is using the WTIS have you seen any impact to other IM/IT initiatives?**

GK: I would say that the robust WTIS project management methodology and resources have now influenced the way other local projects are being deployed.

GP: The WTIS has brought new information and a new workload to the hospital organization – in some cases duplicating data collection. The initial impact on new and existing information systems was the collection and storage of WTIS-related

information within internal systems. The added workload of managing WTIS cases certainly added scope to a recent IS/IT initiative at The Ottawa Hospital, which saw the deployment of one corporate surgical information–management system.

To reduce the workload associated with the WTIS, new web-based HL7 interfaces have been developed to automate some of the wait list–management tasks internally.

The expansion of WTIS to capture wait list data for all surgeries has added impetus for electronically linking WTIS data collection from surgeons' offices with existing surgical booking processes. The WTIS has been seen across the province as a partial driver for moving forward with electronic and remote booking systems in many hospitals.

**IN: Are local stakeholders taking advantage of the opportunity to help shape the system moving forward? How does the ongoing maintenance and upgrade of the WTIS compare with other IM/IT initiatives you've been involved in?**

GK: Yes, our LHIN now has an MRI Task Team using the WTIS data to plan regional access for MRI services. We are also working with the WTIS operations team and LHIN to determine how best to leverage the system and capture and report detailed wait list information to align with our collaborative effort to increase access to appropriate care for patients.

GP: The Ottawa Hospital has been highly engaged in the ongoing evolution of the system through the various provincial stakeholder groups, managed by CCO, including the development of the WTIS business intelligence tool, iPort Access. The Wait Time Information Program has also made possible the uptake of suggestions for improvement through their heightened focus on system change requests submitted by hospital users.

As in other provincial implementations, the hospital cannot control when WTIS system changes impact business process. Mandatory changes with mandated timelines sometimes create resource or project scheduling challenges that would have been avoided if the system had been internally managed.

**About the Authors**

**Glen Kearns** is the Integrated Vice-President for Clinical Support Services at London Health Sciences Centre and St. Joseph's Health Care for London, Ontario. Glen serves the departments of Medical Imaging, Pharmacy, Laboratory Medicine, Food Services, Biomedical Engineering and Telemedicine, and continues to work with stakeholders to improve access and the use of information technology to advance the patient care experience, quality and patient safety.

**Gino Picciano** is the current Senior Vice-President and Chief Operating Officer at The Ottawa Hospital. During the implementation of the WTIS at the Ottawa Hospital, Gino had the added responsibility of Chief Information Officer overseeing the introduction of the WTIS at the hospital. He has also been an active participant in local and provincial eHealth initiatives.



# Has your data lost direction?

## Find your way with Initiate® Interoperable Health

### *Initiate helps customers:*

Reduce duplication rates to 0.019%  
in a province-wide deployment

Link and match information for more  
than 44 million records spread across  
more than 100 source systems

Decrease days sales outstanding,  
saving \$4 million annually

Mastering your critical patient data assets is the key to improving patient care, enhancing customer service, ensuring regulatory compliance and achieving strong ROI.

Initiate Systems, a leader in interoperable health, has helped the provinces of Alberta, British Columbia, Manitoba, New Brunswick, Newfoundland and Labrador, Nova Scotia, Ontario, Saskatchewan and many others solve their toughest challenges in linking patient data.

***Visit [www.initiate.com/Canada](http://www.initiate.com/Canada) to view a full case study and learn how Initiate can help you.***



Know your data.  
Trust your data.

# An Integrated Approach to Stakeholder Engagement

Dafna Carr, Arlene Howells, Melissa Chang, Nadir Hirji and Ann English

## Introduction

The Wait Time Information System (WTIS) project was a complex change-management initiative. For the first time in Ontario, wait time data would be captured directly from clinician offices and publicly reported in an effort to improve access to care. The change meant using new technology, new business processes and, most importantly, a new dimension of accountability for making improvements within the health system. Success required engaging thousands of individuals at all levels of healthcare, many of whom were skeptical and resistant to the upcoming change, and subsequently gaining their support and motivating them to use the WTIS and its data.

To achieve the level of stakeholder engagement that would be required to deploy and sustain the WTIS, the project team needed to address both the business reasons for change, and the emotional reactions to it. The team applied a three-pronged approach encompassing strong communications, compelling adoption efforts and hands-on training. Communication focused on awareness and education, ensuring that information was coordinated, consistent and transparent. Adoption efforts involved helping hospitals and users understand and prepare for the impact of change. Training provided hands-on practice to get people comfortable with using the system.

This article explores how information management/information technology (IM/IT) projects can integrate communications, adoption and training to drive stakeholder engagement.

It also provides insight around how, when used effectively, these functions can maximize limited resources and provide valuable benefits.

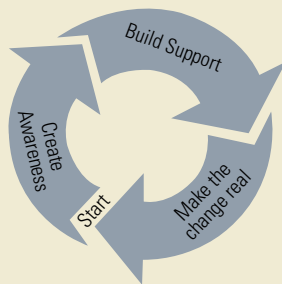
## The Approach to Stakeholder Engagement

The WTIS project team approached stakeholder engagement using three steps (Figure 1): creating awareness (communications), building support (adoption) and making the change real (training). Importantly, these functions were executed

**To achieve the level of stakeholder engagement that would be required to deploy and sustain the WTIS, the project team needed to address both the business reasons for change, and the emotional reactions to it.**

using an integrated plan managed through a single Stakeholder Engagement Lead within the project leadership team. This differs from other projects or organizations, where communications, adoption and training are managed separately, often leading to inconsistent messages and a disconnected view for stakeholders. Through the course of each deployment phase,

**Figure 1. The three components of successful stakeholder engagement**



1. **Creating awareness** – Educate and generate momentum (Communications led)
2. **Building support** – Target stakeholder outreach (Adoption led)
3. **Making the change real** – Sustain new business processes (Training led)

there were stages where one function would lead and the others would support, as noted below.

This highly iterative approach relied heavily on lessons learned through each project phase to shape decisions and deliverables. As part of the project's Beta/Phase I, which deployed the WTIS in five hospitals, the project team learned that an integrated stakeholder engagement program reduced confusion and promoted clarity about activities and timelines. The support and involvement of key influencers and opinion leaders throughout the course of the project was also identified as critical in enabling the team to tailor its approach and messages to motivate change with various stakeholder groups. As a result, stakeholder engagement, post Beta/Phase I became increasingly important, and the project was able to leverage learnings to improve the process and program.

### Strategic Levers to Support Stakeholder Engagement

In February 2004, an Ipsos-Reid/Ontario Medical Association poll found that most Canadian physicians reported feeling that their patients faced unreasonable delays in the areas of orthopedic surgery, diagnostic imaging, cardiac care and cancer treatment. There was recognition by hospital, clinical and Local Health Integration Network (LHIN) leaders that change was needed in order to reduce wait times and ultimately improve access to care. Also as a result of the Wait Time Strategy (the strategy), the Ontario government committed to start publicly reporting wait times across the province to create public accountability for performance improvements needed in the healthcare system.

The desire for change incited key influencers at various levels within the industry to be part of the project Steering Committee and Clinical Expert Panels (CEPs). These leaders provided guidance on how best to support the program and make it meaningful, particularly at the clinical level. They were

not just figureheads; they were willing to roll up their sleeves and work together to find solutions and options to support the deployment of the WTIS.

Another incentive for hospitals to participate in the strategy was funding committed by the federal and provincial governments. Initially, this funding helped bring stakeholders on board to use new business processes and the new system. In later phases, evidence-based improvements in wait times became an important part of the clinical engagement message.

### 1. Creating Awareness – Educate and Generate Momentum

This first step toward stakeholder engagement rested primarily with communications. From the Beta/Phase I experience, it was clear that stakeholders (hospital management, hospital project teams, clinicians and clinician administrative staff) needed to be fully aware of the

WTIS and its purpose for successful adoption. As with any IM/IT project, however, delivery cost is a significant concern, and budgeting for a dedicated communications function is often not considered a priority. However, Sarah Kramer, Wait Time Information Strategy Lead, understood the cost/benefit

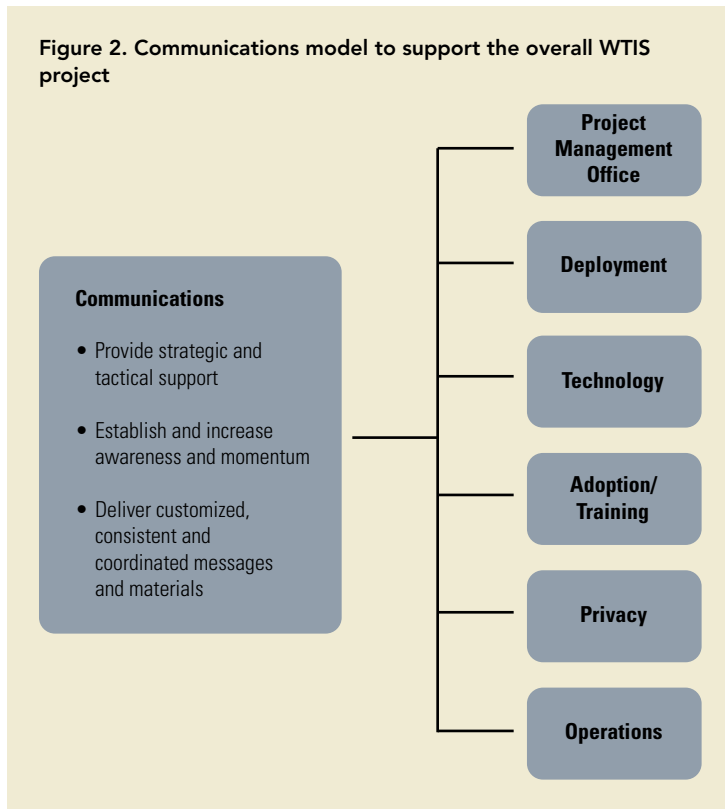
**As part of the project's Beta/Phase I, which deployed the WTIS in five hospitals, the project team learned that an integrated stakeholder engagement program reduced confusion and promoted clarity about activities and timelines.**

trade-off between awareness and adoption, and made a strategic decision to ensure communications resources were available to the project. If the audience does not know what to expect and when, why it is important and what is in it for them, resistance will be high and adoption low. In the early stage of deployment, communicating high-level strategic messages was integral in helping to educate stakeholders and generate momentum for using the WTIS. As deployment progressed toward "go-live," communications became more tactical and messages focused on specific project work streams.

### Embed Communications across the Project

The communications function operated under an agency model to support the project team. Like an agency, communicators were assigned major project work streams as "clients," working closely with them to create effective messages for their respective stakeholders. This role required communicators to intimately

**Figure 2. Communications model to support the overall WTIS project**



understand the challenges and issues facing both their client and stakeholder groups in order to provide proactive and effective strategic and tactical support.

Embedding communications supports within all facets of the project team was a new model for many project team members and required an adjustment period as new workflows

**If the audience does not know what to expect and when, and why it is important and what is in it for them, resistance will be high and adoption low.**

and expectations were established. Some early success in the ability of communications to support issues management served to expand the function’s role to that of strategic communications advisors (Figure 2).

Communications specialists’ ability to provide strategic counsel was rooted in their exposure to and understanding of the activities, challenges and potential issues at all levels of the project. As a member of the project leadership team, the Stakeholder Engagement Lead was able to provide crucial insight and context from an overall program perspective to guide the development

of plans and high-level messages. Being embedded, communications specialists also had a cross-functional view of activities and access to subject-matter experts; this was important in helping to tailor messages and providing timely, tactical support.

**Focus on a Few Key Concepts**

Recognizing that various stakeholders would be compelled by different reasons to change, the WTIS project team knew that a “one size fits all” approach to communications would not work. Message, delivery mechanisms and tactical activities needed customizing to account for unique perspectives and to achieve the level of engagement required across all stakeholder groups. At the same time, it was important to balance customization and consistency in messages, as well as cost-effectiveness. Recognizing this, the project team focused on a few key strategic concepts that would have the most impact and carry the weight for the program.

One of the first steps was developing an inventory and analysis of all stakeholders, capturing the specific needs, concerns and expectations of each group. Through this process, the team identified more than 20 stakeholder groups that would be touched by the WTIS. They then created and tested key messages with the various stakeholders.

From here, the project team sought credible “champions” to act as advocates of the program and as communications channels to deliver messages. These champions had to be known and respected leaders in the field who could influence and motivate change among their peer groups. For example, at the executive level, Dr. Alan Hudson, Access to Services and Wait Time Strategy Lead, Sarah Kramer, Wait Time Information Strategy Lead, were used to communicate directly with hospital and LHIN CEOs and CIOs. Clinical leadership messages came from members of the CEPs, who helped guide the development of province-wide standards and targets for the assessment of care and could speak to specific clinical issues by specialization. Clinician champions were also secured across the province and within individual hospitals to provide local support. The provincial clinician champions were available for information sessions and collegial discussions to support hospital clinical leaders in their clinician engagement efforts. Hospitals were also required to identify clinical leaders from within their facility as advocates for the WTIS. These local champions also provided important feedback to the project about how the field was responding to the deployment. The value of these early adopters and their endorsement was a key contributor to the successful adoption of the system.

With champions secured, the project team developed tactical

### Awareness Tactics

- WTIS information package and workshop to introduce Hospital PMs to the program
- Frequently Asked Questions documents addressing common inquiries and concerns and an online Question & Answer database for “self-serve” reference
- Testimonial posters using individuals at various levels within hospitals to endorse the program
- WTIS demonstration DVD with step-by-step overview of how the system works
- WTIS overview booklet with background on the importance of the system to the Wait Time Strategy
- Targeted stakeholder newsletters for regular project updates
- Locally planned and delivered WTIS information sessions that utilized communication material and support (presentations, speakers) provided by the project team

activities, materials and vehicles through which to deliver information. Communications materials were carefully crafted and disseminated on a schedule to various target stakeholders, with clear communication directions and suggestions. The team also ensured there was flexibility to communicate critical messages when needed. Champions were equipped with packaged materials to support their role in endorsing and advocating the project in the field.

Project Managers (PMs) within each hospital who were responsible for implementing the WTIS helped to streamline the distribution of project information to clinicians and customize materials for local needs. Hospital PMs became the single point of contact for clinicians seeking information on the WTIS. Filtering information through this single point of contact allowed the project team to ensure all communications remained consistent with the project’s overall plan, goals and timelines.

Through the support of champions and Hospital PMs, the project team could use a cascading approach, where these individuals received information first and were tasked with disseminating messages and materials. This approach ensured that the right messages were delivered to the right people at the right time by the right person. A major emphasis was placed on ensuring hospital executives, Hospital PMs and other leaders were informed of any major decisions before they were communicated to front-line hospital staff or clinician offices. This allowed hospital leaders to anticipate questions and concerns and be prepared to support staff and other stakeholders when necessary. The WTIS project’s internal team was also an inherent component of this cascading model. Project leaders kept internal team members well-informed, not only to secure their continued critical engagement in the program, but also to ensure they were equipped with current information

and prepared to respond with accurate and consistent answers if contacted by external stakeholders.

## 2. Building Adoption Support – Targeted Stakeholder Outreach

While the Communication component of the stakeholder engagement plan sought to create awareness of why the change was important, the Adoption component sought to create a receptive environment for the change and prepare people for a new way of working. The program also involved identifying observable behaviours warning of a risk that the change would not be adopted.

**In the early stage of deployment, communicating high-level strategic messages was integral in helping to educate stakeholders and generate momentum for using the WTIS. As deployment progressed toward “go-live,” communications became more tactical and messages focused on specific project work streams.**

To set the pace and degree of the change-management activities, the project team determined where the biggest barriers existed. Although engaging the support of a number of different hospital stakeholders was important, the project team chose to focus the majority of outreach and adoption efforts on the group that would be most affected by the WTIS: clinicians and their office staff. Care decisions are made with patients within clinicians’ offices, and WTIS data would be inputted there, too.

### Trade Resistance for Value

Clinicians expressed a number of reservations about the WTIS project. Some were concerned about having to share their wait list information and exposing the private operations of their practice, or potentially putting personal health information at risk. Others were concerned about the time and effort involved in learning the processes and the additional workload they would create for already overtaxed office staff. Several clinicians who were not comfortable with web-based technology were reluctant to have a computer and Internet service in their office. Effective adoption of the WTIS required all these areas of resistance to be addressed using clearly articulated value propositions for clinicians. The project team also understood that value would be best driven through the appropriate agents of change, and sought to identify and leverage these agents to support the overall adoption effort.

### Lessons Learned in Establishing Awareness

1. **Support and represent adoption, communications and training at the project leadership table** – in order to maintain a full picture of what issues and concerns are top of mind for stakeholders.
2. **Under aggressive deployment schedules, start communications to the field right away.** Strategic long-term planning is needed in parallel with “get-you-through-the-night” activities.
3. **Complete an extensive stakeholder analysis and integrated message plan** to customize messages to manage expectations, eliminate fears and generate trust and goodwill with your audience.
4. **Make communication a two-way, ongoing dialogue** between the project and your audience.
5. **Consider what people want to hear,** and then determine the most appropriate method to reach that audience.
6. **Find industry leaders or “champions” who have credibility with your primary stakeholders** – and equip them to support adoption in the field.
7. **Internal project champions are equally important in the engagement process.** Solicit their leadership to advocate for your project among employees, keep communications open and invite feedback to help refine future plans and tactics.
8. **Different communications vehicles work for different audiences** – pick what will have the highest impact with each stakeholder group.

### The Government as an Agent of Change

Hospitals and clinicians had been raising the issue that more money was needed to fund efforts to improve access to care in the province. As mentioned earlier, funding committed by the federal and provincial governments became an important strategic lever for encouraging hospitals and clinicians to participate in the Wait Time Strategy. Funding allowed hospitals to make better use of resources and increase operating room capacity so that more people could get the treatment they needed faster. Adoption messages highlighted the link between clinicians entering wait time data into the WTIS and improved access to OR resources.

When the MOHLTC agreed to provide wait time funding, it did so on the basis of certain commitments from hospitals and clinicians. Government created policy to reinforce the need for change. Hospitals agreed to collect and report data, and they had to persuade clinicians to report their wait time information through the WTIS in a timely manner and according to the standards set by the province. Clinicians also needed to be transparent with their wait lists and share relevant information with hospitals so that access to care could be systemically managed.

### Hospital Management as Agents of Change

Conditions of wait time funding, laid out in Hospital Accountability Agreements between hospitals and the MOHLTC, put the onus of engaging clinicians on the hospital. It was important that hospitals maintained ownership for clinician engagement and that the provincial project team remained in a supporting role to help hospitals meet their commitment. For example, the project team supplied Hospital PMs with an

**The project team sought credible “champions” to act as advocates of the program and as communications channels to deliver messages. These champions had to be known and respected leaders in the field who could influence and motivate change among their peer groups**

agenda and support for their discussions about the hospital’s clinician adoption environment with their Chief of Surgery.

Once wait times started to be publicly reported, showing widely disparate wait times across facilities, hospitals were keen to improve their results and demonstrate – specifically to their local communities – that they were working diligently to reduce wait times and improve efficiencies. With accountability for performance improvements resting on their shoulders, hospitals needed the ability to compare wait lists across clinicians so that they could manage processes and make evidence-based OR resource decisions.

In most cases, however, hospitals had little insight into wait times. Clinicians maintained their wait lists on paper within their own offices and were often reluctant to share them for fear of losing autonomy over their private practice and potentially being penalized for inappropriate wait times. To overcome these fears, the program stressed that only aggregate data by hospital would be reported to the MOHLTC and on the public wait times website ([www.ontariowaittimes.com](http://www.ontariowaittimes.com)). If access issues existed, hospitals now had the means to review the data at a more granular level. They could work with clinicians to understand the root causes and, if required, help them reduce their wait lists. This meant that clinicians would now have the necessary support to manage their waits and make the case for more operating room resources.

When the WTIS project began, many clinician offices did not have computers and/or Internet connectivity. A study of IT prevalence in Canada commissioned by Canada Health Infoway found that only 20% of Canadian physicians reported having electronic medical records or used technology in clinical care (Protti 2007). Anecdotal information suggested the reason was that clinicians

were concerned about having to transmit patient information electronically, potentially compromising privacy. In some cases, clinicians were simply unaccustomed to using technology or not willing to incur the additional costs associated with purchasing new computer equipment and Internet service.

Expert Panels (CEPs) and the project Steering Committee addressed this by establishing standardized, province-wide targets for how quickly patients should receive treatment, according to the urgency of their condition. The CEPs also designed and validated priority assessment tools for their specific areas

of care to support clinicians in making prioritization decisions and ensuring more consistent and equitable access to care across the province. These priority assessment tools and the standardized reporting requirements were incorporated into pocket-sized quick reference cards (see Figure 3) and delivered to all participating clinicians. These efforts supported clinicians across Ontario in using a common and consistent approach to determine priority for care. Importantly, guidelines on how to use the assessment tools emphasized they were not a substitute for a clinician's experience and professional judgment when deciding on appropriate treatment.

Figure 3. Example of a priority assessment tool

Priority	Descriptions	Access Target
1	▪ Immediate—emergency surgery required	Within 24 Hours
2	▪ Patients diagnosed with highly aggressive malignancies	Within 14 Days
3	▪ All patients with known or suspected invasive cancer that does not meet the criteria of Priority 2 or Priority 4	Within 28 Days
4	▪ Patients diagnosed with indolent malignancies	Within 84 Days

v2

To overcome these challenges, some hospitals decided to purchase computers for their clinicians and contracted with the former Smart Systems for Health Agency (now part of e-Health Ontario) to provide secure Internet access at no cost to clinicians. The pay-off on this investment would benefit both clinicians and hospitals in a number of ways beyond the WTIS. The technology would enable faster and more secure communications with clinicians, particularly those in remote offices who previously relied heavily on couriers and faxes to get information from hospitals. It would also create new efficiencies by allowing other manual activities to be performed electronically. And, finally, it meant that clinicians would be better equipped for future IM/IT initiatives. To date 500-plus Internet connections have been provided to clinician offices.

**Clinical Leads as Agents of Change**

Recognizing wait times as a growing concern, most clinicians saw the need to standardize how care was prioritized from practitioner to practitioner. Clinical advisors serving on Clinical

Approximately a month before go-live, each clinical lead hosted a teleconference to discuss the clinical requirements with their peer group. This was an important opportunity for clinicians to seek clarification and for the clinical leads to reinforce the importance of capturing wait times data using the standards and guidance provided.

**Clinical Champions as Agents of Change**

The project team understood that clinicians would be more receptive to receiving WTIS information from respected colleagues than from someone perceived as working with a government agenda, or some “technical guru.” As mentioned previously, early phases of the project focused on engaging strong and credible spokespeople for the WTIS and creating awareness of the program among their colleagues across the province. As the project progressed, the provincial clinician champions were leveraged to support hospitals’ adoption efforts. Champions were recommended strategies for addressing clinicians who were still resistant. Interactive forums such as teleconferences,

face-to-face sessions or one-on-one calls were organized for clinicians to openly discuss concerns and share solutions with peers. The project also benefited tremendously from having Dr. Alan Hudson, the Access to Services and Wait Time Strategy Lead, front the charge for change within the province. As a well-regarded former surgeon, he became a strong champion for the WTIS and was relentless in telling practitioners and administrators the compelling story of why change was needed. With the expansion of WTIS reporting, clinician consultants were added to the adoption effort and acted as spokespersons for the Access to Services and Wait Times Lead. These consultants lobbied both individuals and Chiefs of Staff/Medicine to garner acceptance of the principles underlying the impetus for wait times reporting.

**Table 1. Performance indicators used to monitor clinician adoption**

- Network order agreements for Internet connectivity
- Hospital chiefs attend clinical engagement kick-off call
- Clinician landscape review
- Progress assessment of clinician engagement
- Distribution of priority assessment tool cards
- Outstanding network order agreements for Internet connectivity
- End user training plan developed
- Clinician connectivity complete
- Train-the-trainer session
- End user training

Two important lessons were learned at this time. First, the value of engaging senior practitioners within each hospital to be local champions and address site-specific issues became evident. Hospital clinicians could have their day-to-day concerns addressed by this respected colleague. Over time, the project team better understood the attributes that made clinician champions particularly effective, such as decision-making authority and cross-departmental influence. The support of a local hospital champion became a key indicator for adoption throughout deployment, and hospitals that lacked a strong advocate encountered more adoption challenges. Second, clinician administrative staff also played a critical role in gaining clinician buy-in. Administrative staff were direct users of the WTIS, entering the wait time data themselves and benefiting from efficiencies provided by an electronic system. This stakeholder group proved to be key influencers, particularly to resistant clinicians. As a result, the WTIS project team also provided guidance and support to help Hospital PMs connect with clinician office teams.

### The Project Team as Agents of Change

Early on in the project, adoption efforts focused primarily on supporting provincial and local champions in getting the WTIS message out. Their presence in the field was particularly important in building credibility and trust with clinicians. As awareness of the WTIS grew, the project team evolved their approach to work directly with hospitals and implemented a number of support tactics and tools to help individual facilities manage the change and drive adoption within their clinician community.

#### Adoption Toolkit Tactics

- Structured discussions to understand the clinician environment and assess a hospital's progress in achieving adoption
- Adoption coaching sessions to help Hospital PMs deal with resistance and overcome objections
- Specialty-specific information sessions (via teleconference) with Clinical Expert Panel chairs, where colleagues could share common concerns and solutions
- Frequently Asked Question documents and other materials designed specifically for, and targeted to, clinicians and their offices
- Local champions who can be advocates within hospitals and across the province

#### Adoption Lessons Learned

1. **Focus on the business benefits** – in this case getting patients treated faster.
2. **Be clear on where you need to have the maximum impact.**
3. **Integrate adoption with the overall project team** and have a horizontal view of the project to look for warning signs of resistance.
4. **Use clinical leaders as early adopters** and leverage them as much as possible to communicate a message “by clinicians, for clinicians.”
5. **Identify meaningful value propositions** that align to expressed resistance points.
6. **Utilize the appropriate agents of change** to drive value messages. Equip these agents with supports and clear delivery suggestions.
7. **Hold on-site information sessions** with local and provincial champions at a time that works for busy clinicians (often early morning or evening hours).
8. **Build measurable indicators** for clinician engagement into your overall project plan.
9. **Review on a daily basis**, leading and lagging indicators that can predict where challenges may crop up.

To address some clinicians' lack of understanding about what the system would do and how long it would take to input data, the project team worked with Hospital PMs to educate clinicians and their office staff on the value and ease of using the new technology.

Education included creating demonstration/testimonial videos and booklets featuring user experiences from previous phases. These tools were effective in showing that in a few easy steps, data

#### Training Tactics

- Train-the-trainer sessions
- Comprehensive training materials – presentations, FAQs, application screen shots
- Training hotline
- Training tip sheets
- Demonstration DVD
- Access to subject matter experts
- Online e-learning tutorials

could be entered into the system and permanently stored, leading to efficiencies in wait list management. They also showed how automated reporting using centralized and easily accessible data would help clinicians more proactively manage wait lists without increasing workload for their administrative staff.

The Adoption Assessment Profile tool (Figure 3) proved to be valuable in identifying areas of resistance. It listed observable behaviours that indicated adoption was on track. The assessment profile was completed through structured phone meetings with Hospital PMs and/or the hospital clinician champions at key intervals throughout deployment. The project team supported hospitals in developing strategies and techniques to manage their particular set of clinician adoption issues uncovered through the analysis.

With these tools and tactics, the WTIS project team identified and refined measurable performance indicators to monitor support and resistance to change by hospital. With effective root cause analysis, certain indicators were effective in identifying adoption challenges. As an example, over time the project team noticed a pattern where hospitals with clinicians who were resistant to installing an Internet connection were often the same hospitals with clinician adoption challenges. It turned out that difficulties in getting approval from a clinician to establish Internet connectivity were often early signs of resistance to the WTIS.

Once the WTIS was deployed, work was still required to ensure the system and its data would be used for performance improvements. In subsequent phases of the project, the project team worked closely with the WTIS operations team, which

monitored compliance with data reporting and data quality to see how effectively the system was being used. This information helped identify trends and predict potential challenges for future stages of the project so that the teams could plan accordingly and provide the necessary level of support.

### 3. Making the Change Real – Sustain New Business Processes

The third component of the stakeholder engagement program – Training – focused on providing hands-on, practical interaction with the WTIS and ensured that people were given the opportunity to learn how to track wait times. This step was also important in showing people that the functionality described through the communications and adoption stages was actually being delivered.

During Beta/Phase I, the training program began with a subset of users at the five Beta hospitals. As the project progressed through Phases II and III, that number grew and the user groups became exponentially larger. During initial deployment of the WTIS, trainers had to prepare materials and lead the effort to train new users. As the system expanded to track wait times for more service areas, the ratio of new users dropped considerably and the focus of training shifted to new system functionalities, relying on already trained users at the hospital to support subsequent on-site training.

#### Training Lessons Learned

1. **Build a scalable and adjustable** training program.
2. **Identify local trainers** to deliver training to individual hospitals.
3. **Create materials that can be customized** to the needs of individual facilities.
4. **Listen to and use lessons learned** in developing and delivering future training materials.
5. **Create a training “sandbox”** with practice scenarios to allow users to experiment and become familiar with the actual application.
6. **Build training indicators** into your project plan.

#### Transfer Project Expertise to the Local Level

The WTIS project used a “train-the-trainer” approach, which involved the project team instructing Hospital PMs or other assigned hospital trainers how to use the WTIS so that they could train their clinicians. Train-the-trainer sessions were held face-to-face in regional locations, or via on-the-phone coaching or webinars. Extensive training presentations (including direct screen shots from the application), Frequently Asked Questions documents, a demonstration video and learning tutorials were

created to show system functionality. Like adoption indicators, performance indicators were also used to monitor hospitals as they planned for and conducted training.

To further help hospital trainers, a training “sandbox,” or simulation environment, was available so that trainees could become familiar with the system in a safe and secure real-world environment using fictional patient data. Hospital trainers were

**As more sites went live, the operations team’s role in training increased. Once a hospital was live on the WTIS, both hospital staff and project team members relied on the operations staff to help answer questions about how the system worked and how decisions were recorded in the WTIS.**

encouraged to customize training materials to suit the needs of their facilities (e.g., to include local processes or language common to their hospital), as long as core training elements remained intact and addressed.

In addition to hands-on training on the system, hospital trainers were coached on overcoming objections. Initially, user questions were as fundamental as “Why do I have to learn this?” In later stages, as more people began using the system, resistance noise was replaced by voices of inquiry. People began asking how the application functioned, and why it did or did not function in a certain way, or about process and policy compliance. Questions now took the form of, “Why does the application do X and not Y?” or “When I do X, why does Y error result?” or “At what point does a wait start?” and “What is the starting date for a patient who was waiting at one hospital and then was transferred to another hospital for the surgery?”

As the project progressed, training materials became more structured and were packaged into e-learning modules that were available online. This reduced the variations in local training delivery and increased data quality in the system.

### **Sustain Training through Operations**

As more sites went live, the operations team’s role in training increased. Once a hospital was live on the WTIS, both hospital staff and project team members relied on the operations staff to help answer questions about how the system worked and how decisions were recorded in the WTIS. This team continues to manage the day-to-day operations of the WTIS and reporting to the MOHLTC. They are a source of information and support to their internal colleagues and external clients in training as well as other areas.

### **Results**

With a complex change program that needed to be developed and deployed within aggressive timelines, the WTIS project team had to work quickly to build traction and a level of comfort among stakeholders early in the project. The team’s ability to effectively integrate and leverage communications, adoption and training efforts allowed them to build awareness, mobilize support and get people using the system quickly. The stakeholder engagement approach rallied the support of leaders at 82 hospitals across the province and more than 2,600 clinician offices to start using the WTIS and helped deliver on the government’s commitment to report and reduce wait times in less than two years. Currently more than one million patients in Ontario benefit from this change annually.

### **Reference**

Protti, D. 2007 “Comparison of Information Technology in General Practice in 10 Countries.” *Electronic Healthcare* 5(4): 107–16.

### **About the Authors**

**Dafna Carr** is the Director, eHealth Strategy & Partnerships at Cancer Care Ontario. Dafna was the Implementation Lead for Phase I and II WTIS and Enterprise Master Patient Index Projects. Dafna’s expertise is healthcare transformation enabled by information management and technology.

**Arlene Howells** is an Independent Communications and Stakeholder Management Professional, who is recognized for her capability in strategic program design and tactical program delivery. She has achieved results with start-ups, not-for-profit, public and private organizations as well as other consulting firms, both in Canada and Europe for over twenty years.

**Melissa Chang** is an Independent Consultant specializing in communications and stakeholder management. She provides strategic and tactical counsel primarily to healthcare organizations undergoing complex change initiatives to engage stakeholders across the continuum of care.

**Nadir Hirji, PhD**, is a Senior Executive within Accenture’s Health and Life Sciences practice. Nadir specializes in customer/patient centric transformation, health strategy, business model optimization / redefinition, and change management and adoption.

**Ann English** is Director of Business Consulting and Practice Lead for Clinical & Healthcare Administration Adoption of information technology with xwave, a division of Bell Aliant.

# Stakeholder Engagement: Thoughts from a Clinician

Michael Marcaccio

I became involved in the WTIS project very early on when I was asked to consider becoming a member of the Wait Time Information Management Expert Panel. As I explored and came to understand the intent and dimensions of this project, I saw enormous potential for starting to develop solutions to chronic problems I had been encountering.

As Chief of a large Department of Surgery, I had long struggled with problems related to access to care, resource distribution and management. While these issues span the entire spectrum of surgical care, there was no doubt that at the time, the dominant focus was on what has now become known as “Wait 2,” the wait from the time that the surgeon and patient decide that an operation will be part of the patient’s care to the date that the operation takes place. In trying to manage these issues, I was often frustrated by the lack of any usable data. With few exceptions, the only data available was anecdotal and generated without any standardization. Thus, beyond ensuring that every member of staff had some operating room (OR) block time in order to survive in practice, we were mostly unable to identify resource requirements that would truly address access to care issues.

In my own personal surgical practice, I knew that I was making allocation decisions with respect to my assigned OR block time without any framework to guide me. I was also aware that a few of my colleagues took a simple first-come-first-served approach to assigning their block time to patients, while many others were making allocations based on their personal assess-

ment of a patient’s need. My experience led me to understand that there was wide variability in how prioritization decisions were made, raising questions of fairness of access for patients. When I knew that a patient I had seen would have a prohibitive wait, I had no knowledge of whether there was another option within the surgical care system that could offer my patient a more reasonable wait.

Another issue that I grappled with was effective communication with our department members. I was surprised at the number of surgeons not using electronic communication, and this presented a real challenge in a department the size of ours. It also limited the ability to move forward with our hospital IT strategy. Therefore, I saw the WTIS as a potential stimulus to move the IT agenda forward, which I believe is an important evolutionary step in healthcare.

As department chief at an academic health sciences centre, I also had a unique experience with using a data-driven model. Our hospital was a member of the Cardiac Care Network, and I was very familiar with their data management system, the use of clinical data to drive system-level decisions, and the success of the process whereby good data demonstrating significant need led to major resource allocations. It was a long-standing point of contention within our department that there seemed to be a two-tier level of care, that is, the cardiac surgeons had continuously growing, specifically protected resources, while the rest of the department relied on expanding resources from global

funding allocations, for which there were a seemingly unlimited number of competing priorities. I had always pointed out to the department that the cardiac allocation system was based on the excellent data about patient need and access issues, and lamented that if only the rest of us had such a system we could more fairly compete in the resource allocation arena.

Thus, it was an easy decision for me to become involved in the WTIS project and, as I came to understand the methodology, to be a champion for its implementation and adoption. As I began these activities, I was not surprised at the level of initial resistance from clinicians. Having had reasonable experience with change-management initiatives, I was aware that any change would meet with some resistance, and this seemed somewhat more common in surgery than in other areas. Predictably, many of the barriers could be anticipated and good solutions found, as they were common to other change initiatives within surgery. These issues included impact on the administrative workload for surgeons and their staff, cost, general distrust of administrative and government initiatives and concern about loss of autonomy. It was clear that a key determinant of success would be the ability to manage these issues in a direct and tangible way. Another predictable occurrence was that as one problem was solved, new ones would be put on the table. Thus the change-management strategy had to be a continuously evolving process. However, there also had to be limits in place so that the project could actually move forward and not become paralyzed by the continuous generation of new barriers.

Several factors were key to the ultimate success of the WTIS project. Incorporating feedback while setting finite deadlines for implementation provided a good balance between consultation and action. A particularly important example would be the ultimate decision to extend the system to all surgical care. The initial phase of the project was targeted to five areas of high priority for the government. However, front-line surgeons made it very clear that they did not support a strategy that further propagated their perception of two-tier care within surgery, creating a “have and have not” environment. This feedback was incorporated into the strategy and became valuable leverage with surgeons when the time came to expand the system.

Another critical success factor was the ability to demonstrate that the availability of useful information about the wait for surgery led directly to improved access to care. From a healthcare system point of view, it was important that this improved access was driven through an array of methods and not simply from adding new fiscal resources, not the least of which was the improvement in wait times that came from implementation of the WTIS. This included the use of standardized definitions, the elimination of duplication where patients were waiting on multiple lists, and elimination of waiting periods that were not caused by the availability of resources, but rather by patient and practitioner preferences. There is no question that lever-

aging incremental funding to ensure adoption of the system was important, although this alone would not have led to success without some of the other elements.

I personally believe that another important part of this strategy was the decision of the Clinical Expert Panels to utilize priority assessment tools that require clinician judgment in the priority decision for each patient. This addresses one of the important issues of physician autonomy, as well as being key to a prioritization method that does not require massive data input and, therefore, an unacceptable workload.

Additionally, recognizing that some of the data capture process was purely administrative, and focusing educational efforts on surgeons' assistants – who are a key part of the process, proved an important step in adoption and in ensuring data integrity. Consideration of these issues is very important, as clinicians are rightfully concerned that the time they have for direct patient care is continuously declining.

As noted previously, surgeons require a range of communication and education strategies in order to make adoption successful. Thus, a comprehensive change-management strategy, offering an array of options, is critical to successful implementation as demonstrated in this project. While some resistance to the adoption and use of the system remains, perceptions are changing among clinicians. We have found that by presenting surgeons with some of the data the WTIS generates, they become more interested in the system because they see potential uses for the data. Since they do inherently want to provide better care for their patients, they will see value in the data when it is presented to them, and this in turn will enhance their support for the system.

Having accomplished a successful implementation, we need to ensure that the system continues to evolve and, as we move forward, that we continue to address surgeon concerns in a meaningful way. In particular, strategies that seek to minimize or reduce the administrative workload confronting clinicians will be important. Incorporating the WTIS into an electronic OR booking process is an example of where this can be achieved.

There is also the danger that the focus on new healthcare system wait time issues, such as the new Alternate Level of Care and Emergency Department projects, and political pressures might divert interest and resources from the surgery projects, negatively impacting clinician engagement and diminishing the commitment to moving forward. It will, therefore, be critical to demonstrate the ongoing value of the WTIS and the ability to capitalize on potential opportunities that the system offers for the future.

#### About the Author

**Dr. Michael Marcaccio** is a Professor of Surgery at McMaster University and recently concluded a 15-year term as Chief of Surgery at Hamilton Health Sciences. He is a member of the Wait Time Information System Expert Panel and Provincial Champion for the implementation of the WTIS.

# Turning Data into Meaningful Information

Julian Martalog and Shalu Bains

## Introduction

The Ontario Ministry of Health and Long-Term Care (MOHLTC) launched the Wait Time Strategy in 2004 to improve access to healthcare by reducing the wait times for procedures and treatments. A fundamental component of the strategy was the development of the Wait Time Information System (WTIS). On behalf of the MOHLTC, Cancer Care Ontario (CCO) delivered the first electronic application used by hospitals province-wide to collect essential wait time data. Until then, clinicians had been maintaining wait lists within their own offices (usually on paper), but had no effective way to manage waits that were getting too long. Patients also wanted faster treatment, but had no concrete information to hold the health system accountable for inappropriate waits or to help in managing their own care. Lastly, hospitals and health system planners knew that a more comprehensive view of wait times could help them make objective decisions around how to allocate resources. The WTIS was introduced to solve this information challenge.

Having better information, however, is only one side of the equation. Arguably, it's how you use the data that will provide the benefit. The Wait Time Strategy (the strategy) used a "pay for performance" approach requiring hospital leaders to be accountable for using the data captured through the WTIS to achieve defined wait time targets in return for funding for more procedures and programs. Hospital accountability for improving performance was further driven through the reporting of wait times on a public website ([www.ontariowaittimes.com](http://www.ontariowaittimes.com)).

**The ability to meet data reporting requirements is closely monitored by the Wait Time Information Program, which plays an important role in determining what may be hindering hospitals in complying with data quality standards or performance targets.**

Here we examine the steps that CCO took to support the collection of necessary data and turn it into meaningful information to drive improvements. This experience is now being used to shape performance management activities for the broader access to care agenda across the province.

## Setting the Standards for Success

For the Wait Time Strategy, success hinged on being able to secure accurate, reliable and timely wait time data. While a long-term solution was being developed, an interim manual tool was put in place to begin the process of data collection and reporting for the initial five service areas of the Wait Time Strategy. This preliminary information was published online every two months, giving Ontarians and healthcare providers their first opportunity to view wait times for key procedures, by hospital.

The interim process also served to define what was needed to effectively measure performance in the long run. As an example,

to ensure timeliness and accuracy of data, it was determined that patients scheduled for treatment should be entered into the system within two business days of the decision to treat, and that these cases should be closed within two business days of the completion of the procedure. Also, any external circumstances

## CCO has also developed a number of tools for hospital leaders to monitor performance levels against key criteria and better identify problem areas.

that delayed treatment (such as vacations) should be tracked and deducted in order to calculate the “true” waiting period. These measures ultimately formed the criteria for wait time reporting as stipulated in accountability agreements between the MOHLTC and hospitals as a condition for funding under the strategy.

In addition, with a better understanding of current performance levels gained through the preliminary data, Clinical Expert Panels advising the Wait Time Strategy now had evidence on which to establish performance targets. The province now has targets based on reasonable maximum wait times according to the urgency of a patient’s condition, using a priority scale of 1 (most urgent) through 4 (least urgent). Priorities – and the target wait times associated with each level – provide standards for treatment across Ontario and serve as a method of accountability for physicians, hospitals and the government.

### Getting to Wait List Management

With standards defined, the WTIS was built and implemented to accelerate and automate the collection of wait time data from hospitals and clinician offices across Ontario using a common and consistent approach. Most importantly, the electronic solution allowed data to be captured and reported in near real-time, tracking delays in treatment and flagging cases that approached wait time targets – all of which was critical to actively manage wait lists.

Arriving at a point where clinicians, hospitals and health system planners had accurate and comprehensive wait list information was no easy task. From a data management perspective, the process involved four sequential stages:

1. **Collect existing data.** To get a full picture of the backlog, clinicians were required to enter not only new wait list cases into the WTIS, but also all pre-existing cases that were being maintained manually. Clinicians also needed to apply the new provincial priority ratings to all new cases.
2. **Clean up the wait list.** Next, the list needed to be purged of cases that did not aptly constitute a “wait” – for example,

patients entered as “placeholders” for OR time or who appeared on multiple physician wait lists (in an attempt to get treatment faster). These “non-waits” may have accounted for anywhere between 10 and 30% of entries.

3. **Assess long-waiters and priorities.** The sanitized list could now be reviewed for patients whose waits were excessive (2 years or more) or whose level of urgency for treatment was greater according to the priority guidelines.
4. **Manage the wait list.** With a complete and standardized inventory of patients waiting for a procedure, along with each patient’s acuity and length of wait, clinicians now had the ability to make more informed decisions on how best to manage their patients.

### Staying on Track through Regular Reporting

Today, wait times for the province are reported publicly each month through the Ontario Wait Times website, enabling healthcare providers and patients alike to compare results by urgency of care, hospital and region. This has created a new level of transparency around access issues within Ontario, which in turn has led to a greater sense of public accountability for making improvements.

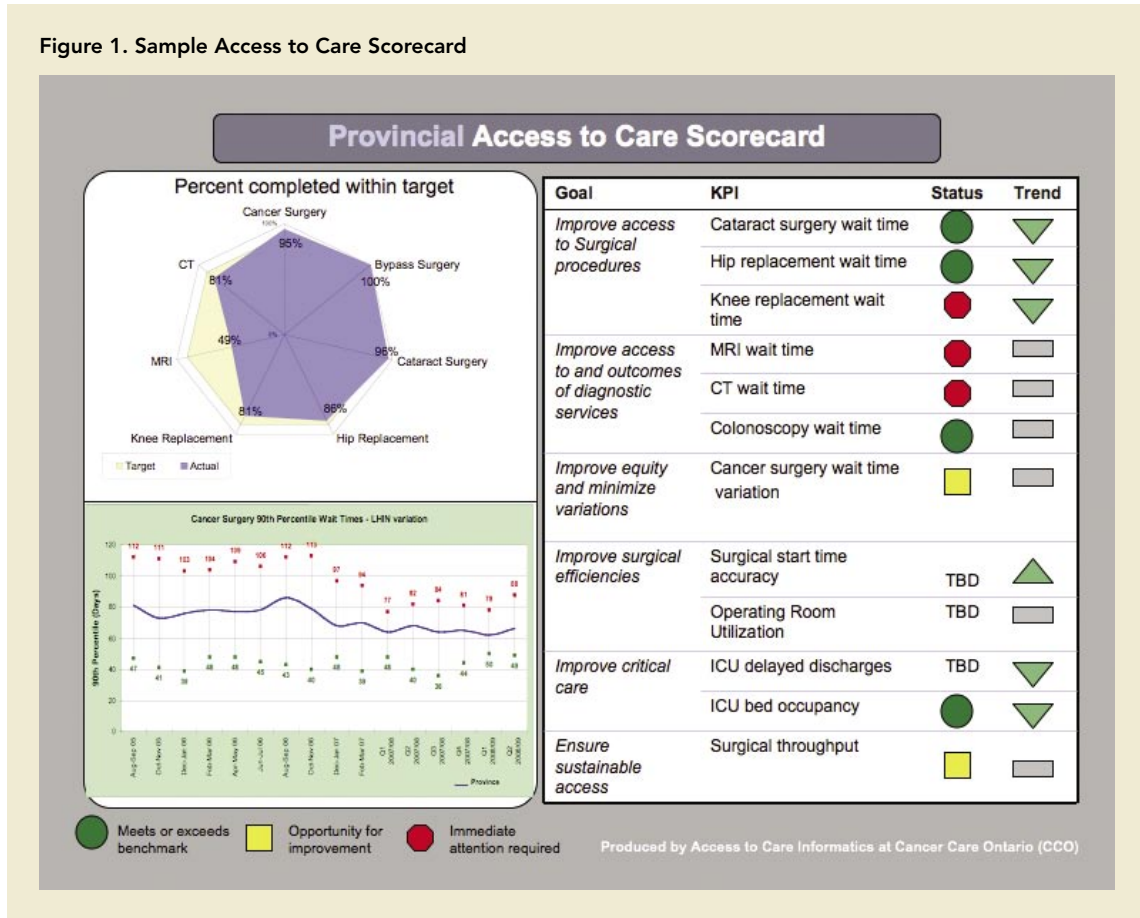
The ability to meet data reporting requirements is closely monitored by the Wait Time Information Program, which plays an important role in determining what may be hindering hospitals in complying with data quality standards or performance targets. With feedback from the field, rigorous data quality improvement methods have been implemented to continually refine data-capture practices within hospitals and by clinicians, ensuring the highest quality data. Hospitals that fail to submit their wait time data according to the guidelines are notified that they will be reported as “non-compliant” on the website and that incremental funding may be recovered.

CCO has also developed a number of tools for hospital leaders to monitor performance levels against key criteria and better identify problem areas. For example, CCO prepares a quarterly “scorecard” for the provincial government and is planning to prepare one for Local Health Integration Network (LHIN), offering a snapshot of key performance indicators along with supporting analysis and interpretation of results (Figure 1). The standardized format allows the MOHLTC and LHINs to consistently track their performance in these areas. Scorecard data highlights areas where subsequent analysis is required.

Through CCO’s web-based iPort Access™ reporting tool, leaders have the ability to generate more detailed, drilled-down reports by specific criteria. This tool not only puts information at the fingertips of hospital leaders, but also gives them the ability to further investigate potential inequities in access (gender or age variances, for example) or analyze utilization patterns.

With the level of reporting provided through the WTIS, hospital boards now have the necessary information to govern

**Figure 1. Sample Access to Care Scorecard**



their organization’s access management strategy and compare their hospital’s performance with others in the province. With timely data, hospitals can better manage access, waits and patient flow within their organizations and improve efficiencies in the delivery of care in line with funding targets. Clinicians have the ability to provide the necessary patient information to hospitals so that surgeries can be booked, wait times tracked and potential problem areas identified. In addition, patients now have information to manage their own care and, through provincial targets, a sense of how quickly they can and should receive treatment.

The importance of accountability-driven public reporting is underscored in the context of sustainability of the Wait Time Information Program. The website receives an average of about 8,700 hits per day – a clear indication from the public that access issues are important to them. With or without incremental funding applied through the pay for performance model, now that patients and the public have a way to track progress and hold their government to account, hospitals and government will continue to feel pressure to keep wait times down.

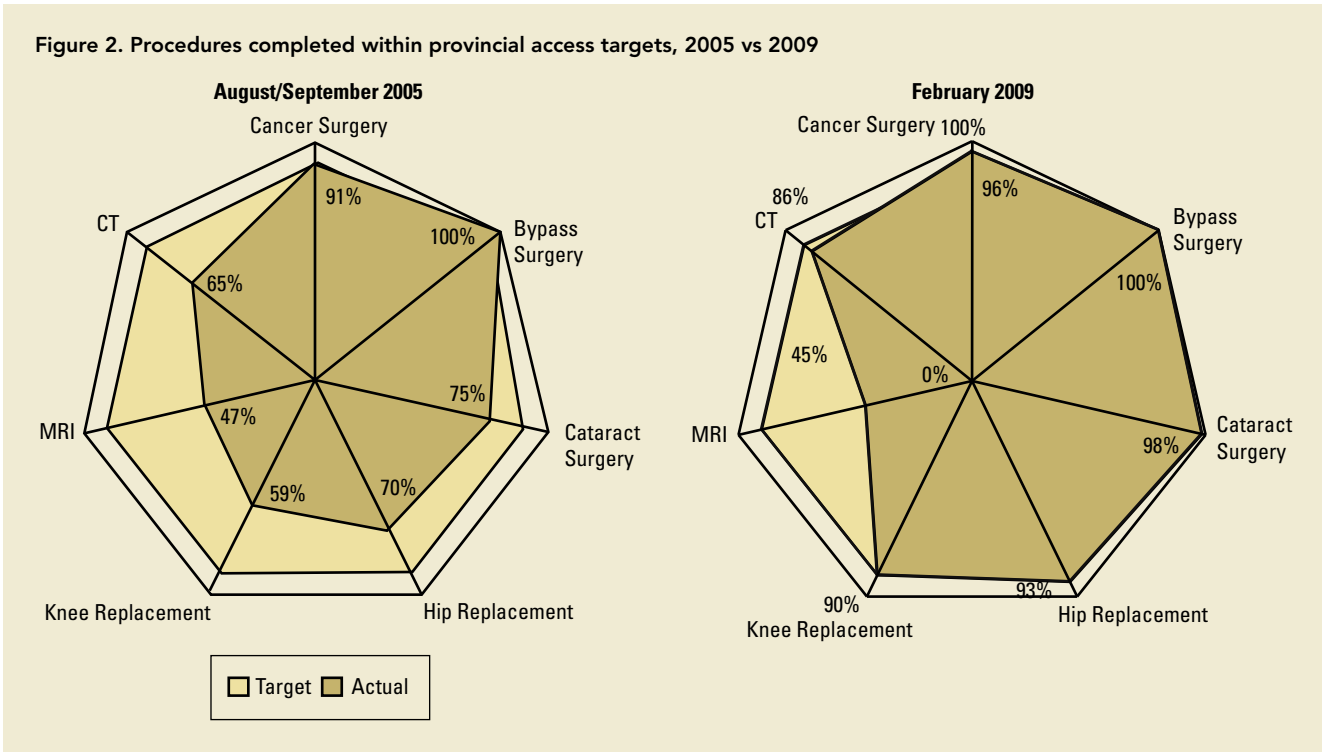
**With the level of reporting provided through the WTIS, hospital boards now have the necessary information to govern their organization’s access management strategy and compare their hospital’s performance with others’ in the province.**

Analysis shows that the accountability driven through public reporting is paying off with a marked improvement for wait times. Figure 2 reports the comparison of February 2009 wait time information against baseline for the areas of care originally targeted in the Wait Time Strategy. (CT and MRI scans, and knee and hip replacements, are broken out separately.)

**Moving from Information to Action**

Once problem areas are identified, CCO provides additional support and resources to the MOHLTC and LHINs in using wait time data to make strategic and operational decisions to

Figure 2. Procedures completed within provincial access targets, 2005 vs 2009



drive performance improvements and inform future intervention strategies. With baseline information and standard performance measures, changes can be planned and started with expectations on the extent to which their success will move the

**CCO also conducts in-depth analyses on specific areas to help the MOHLTC and LHINs gain a better understanding of regional differences and root causes of poor performance.**

measures in the desired direction. This is a shift from what historically has been intuition-based decision-making in healthcare to an evidence-based process (Devit et al., 2005)

CCO conducts in-depth analyses on specific areas to help the MOHLTC and LHINs gain a better understanding of regional differences and root causes of poor performance. This information is used to facilitate discussions between the MOHLTC, LHINs and hospitals around where to target intervention or allocate additional resources. When required, wait time experts and advisors are sent out to hospitals to provide one-on-one advice, share best practices and discuss solutions.

This was the case in late 2007 when CCO conducted a special

analysis on cataract surgery wait times. Although substantial improvements had been made in this area, variations in wait times still existed across LHINs. An analysis by region revealed two LHINs with wait times significantly above the provincial target. Together, they accounted for 44% of the total “over-the-target cases” in the province. In an attempt to find the root cause, a further breakdown of data from these LHINs identified two specific facilities where patients were waiting significantly longer than in the rest of the province.

For the first hospital, an impact analysis against a number of variables concluded that the high ratio of cataract surgeries performed at this facility was driving down the overall performance of the LHIN, but that it was a systemic problem within the region rather than something this facility was or was not doing. In this case the Access to Services and Wait Times Lead for the province, Dr. Alan Hudson, and the chair of the Ophthalmology Clinical Expert Panel, Dr. Phil Hooper, were asked to work with the LHIN to better understand the regional challenges and determine appropriate solutions so that any potential negative impacts on either the LHIN’s public reputation or funding allocation could be avoided. Today, the LHIN is using the various resources available to play a more proactive role in reviewing wait lists and managing accordingly.

A comprehensive analysis of the second facility concluded that the LHIN’s performance was being impacted by one surgeon, who had a significantly high proportion of lengthy

waits. On the basis of these findings, the WTIP recommended that the LHIN allocate additional OR time to the surgeon and when appropriate provide patients with the option to choose treatment with another clinician or facility. Based on the analysis of wait time information and recommendations made by the WTIP, the surgeon was able to treat more of his urgent patients

**With reliable wait list information extracted through the WTIS, the province can make more informed, unbiased decisions about allocation of future funding to reward performance improvements and enforce consequences of under-performance.**

and move them through the system, reducing his wait list by half and the number of patients with prolonged waits (more than a year) by 45%.

Annually, the MOHLTC also assesses hospitals' success in meeting volume targets and the conditions of funding. With reliable wait list information extracted through the WTIS, the province can make more informed, unbiased decisions about allocation of future funding to reward performance improvements and enforce consequences of under-performance. For example, in 2006–2007, the MOHLTC's decisions for the allocation of \$109 million incremental in-year funding were driven, in part, through an in-depth trending analysis and forecasting completed by CCO.

### **Supporting Future Planning and Continuous Improvement**

The translation of strategic direction into measurable results has been an ongoing challenge within the Canadian healthcare system. A lack of consistent measures, ever-changing priorities and a reactionary focus on short-term priorities make the conversion of strategy into measured outcomes particularly difficult (Devit et al., 2005). CCO is setting out to change that. As the strategy matures, the organization's focus on performance management continues to grow, particularly in ensuring all surgical and diagnostic imaging services achieve their access targets. Today, CCO is looking at leveraging its information management capability and data assets to further support business intelligence – an evolving area of excellence in which comprehensive information is used to forecast trends and predict future needs and costs. Moving into this level of data-driven decision-making is increasingly important for performance management within healthcare – where planning for quality care can be effectively tackled at the provincial, regional and facility levels and the

resulting efficiencies appropriately rewarded. With the results seen to date, there is tremendous opportunity for using wait time information to continue developing new performance indicators and targets as a way to incent continuous improvement and raise the bar for access to healthcare.

### **References**

Devit R., W. Klassen and J. Martalog. 2005. "Strategic Management System in a Healthcare Setting – Moving from Strategy to Results." *Healthcare Quarterly* 8(4): 58-65.

### **About the Authors**

**Julian Martalog** is the Director of the Access to Care Informatics department at Cancer Care Ontario. Julian has experience in information management with local, provincial and national organizations. He holds a Masters in Health Administration from the University of Ottawa and is a certified Health Executive with the Canadian College of Health Service Executives.

**Shalu Bains** is the Manager of Reporting and Analysis in Cancer Care Ontario's Access to Care Informatics department. She has experience in health information management and decision support through her previous positions in both hospital and national organizations. She holds a Masters in Health Administration degree from the University of Ottawa and is a certified Health Executive with the Canadian College of Health Service Executives.

# Clinical Engagement for Performance Improvements

Jonathan Irish

It is important to understand the background behind the wait times process and the context in which implementation of the process occurred. In 2003–2004, the issue of access to care for cancer patients was significant. This was appreciated by “front-line” surgeons and supported by the fact that patients were increasingly complaining about wait times for cancer surgery, as well as for other surgical procedures, such as joint replacement and cataract surgery. Political pressure intensified when local media reported on patient frustration with lengthening surgical wait times and patients increasingly sought surgical treatment outside Ontario because they could not get timely care in the province. As the head of surgical oncology at the University Health Network and Mount Sinai Hospital, I determined that this was one of the most significant challenges we faced. However, when approached by media, administration and by Ministry officials for more details and analysis on these issues, I was unable to provide accurate data on how long patients were waiting for cancer surgery or to provide evidence-based standards on acceptable wait time targets.

It was at this point that three surgical groups in the province (University Health Network, Mount Sinai and Kingston General) started to collect wait time data manually. This data collection was not “real-time” and not related to performance targets. However, it provided a valuable initial environmental scan of how long patients were waiting for surgery. It also gave those surgical departments ammunition to advocate for more

**“Despite wait time data reporting, there is still work to be done to improve wait list management at a regional, hospital and surgeon level. This is challenging, because on one hand it requires ensuring that operative resources at the regional or hospital level are matched to the demand for cancer surgery care, while on the other hand within a hospital unit it may require moving patients from one surgeon to another with a shorter waiting list.”**

resources to provide surgical services. The data was also used to advise the Ministry of Health and Long-Term Care of concerns about increasing waits for services at a time when national and provincial attention was focused on addressing long-standing dissatisfaction about surgical wait times. Particular areas of concern included cancer surgery, joint (hip and knee) replacement, cataract surgery and cardiac care.

A turnaround would require success in three main areas:

1. Establishing acceptable wait time targets guided by the best evidence and validated by expert opinion;

2. Creating a wait time information system that would allow near real-time reporting; and
3. Engaging the clinical community to ensure successful implementation of new processes and sustaining those processes.

Clinical Expert Panels (CEPs) were essential to developing acceptable targets for access to care. In the case of cancer, the length of time that a patient can wait safely for surgery is not known. Where evidence exists, it is based on retrospective data, and there will probably never be high-level evidence from a prospective trial to inform experts on acceptable wait times for cancer treatment. For that reason, it is unlikely we will ever have evidence-driven guidelines in this area. However, there is sufficient evidence to support general targets to determine a reasonable wait time. In other words, the process had to be guided by evidence but driven by common sense and validated by expert opinion, and the CEPs were able to do just that. In addition, wait time targets were compared to other jurisdictions' (e.g., the United Kingdom, Saskatchewan) to ensure that the targets were coherent with other "best practices."

Implementing the Wait Time Information System (WTIS) and ensuring that the new processes to capture and report on wait times could be sustained over time required engagement of the clinical community. "Top down" change rarely works, as it does not always engage the critical opinion leaders and definitely does not engage the "rank and file" community surgeon providing care to the cancer patient. Engaging clinicians early via the CEPs in the development of wait time guidelines and targets was important in establishing credibility for the process and in gaining buy-in from "communities of practice." Implementation was initially led by opinion leaders (such as major cancer hospitals and major cancer surgery leaders) and later the "herd effect" kicked in, as those who were not initially willing felt compelled to participate. The fact that the results of the process were transparent and wait times were publicly available also contributed to implementation. Some hospitals in the later stages of implementation systematically introduced wait time data entry as a regular part of the OR booking process. This "normalized" the wait time collection process and also helped improve participation.

The WTIS is now well-established and allowing near real-time tracking of wait times across most of the cancer surgery system. The access to care standards have been accepted, and most surgeons are aware of the recommended wait time targets for different priority levels of cancer patients. The process is now well into the phase of wait time management and performance improvement. Despite wait time data reporting, there is still work to be done to improve wait list management at a regional, hospital and surgeon level. This is challenging, because on one hand, it requires ensuring that operative resources at the regional or hospital level are matched to the demand for cancer

surgery care, while on the other hand, within a hospital unit it may require moving patients from one surgeon to another with a shorter waiting list. This will necessitate increased engagement at the surgeon level by surgical leaders, administrators and system managers. Regardless, the steps made in this program are enormous, given that a few years ago we had no wait time data or targets to guide access to care activities for patients requiring cancer care. For this reason, I believe that the most important legacies of the entire initiative have been the establishment of a robust wait time data collection system combined with accepted standards of wait time definitions and accepted maximum target wait times.

**"I believe that the two most important legacies of the entire process have been the establishment of a robust wait time data collection system combined with accepted standards of wait time definitions and accepted maximum target wait times."**

Surgery (e.g., biopsy, endoscopy) is the major entry point into the cancer system for most patients and is still the mainstay of cancer care for most malignancies. It is, therefore, essential that access to care be preserved and that access to care targets be adhered to. The availability of wait time information to all stakeholders (patients, surgeons, hospital and system administrators and government) will ensure that surgical services are maintained rather than eroded. As time goes on, I am even more convinced that this initiative is a major step forward in health-care in the province. As budgets tighten, we will see the true test of the WTIS and the incremental volume funding process in supporting the mandate to improve access to surgical care for the patients of Ontario.

#### **About the Author**

**Jonathan Irish** is the Chief of the Department of Surgical Oncology at the University Health Network and Mount Sinai Hospital. He was the Lead for Access to Care and Strategic Funding within the Surgical Oncology Program at Cancer Care Ontario (CCO) and is now the Provincial Head for Surgical Oncology at CCO.

# The Linked Person Record: Managing the Cancer System through Data Integration

Darren Edery

In all data-rich industries, effective data management is essential if users and stakeholders are to expect value from corporate data. For market-driven enterprises, clean and readily accessible data is vital for maintaining a competitive edge. Quality, integrated data in comprehensive and targeted reports enables effective strategic and tactical decision-making, improves data security, increases the effectiveness of marketing campaigns, ensures tracking of products and services and helps meet regulator demands accurately and with minimal effort. In addition to these strategic benefits, high-performance access to the same data is essential for meeting operational demands from front-line staff at call centres, distribution hubs and network monitoring stations.

In healthcare, data-related priorities are radically different. Marketplace return on investment gives way to improving healthcare delivery, supporting performance management, research and funding analysis. Notwithstanding differences in business priorities, technologies, solutions and methodologies can be intelligently adapted from profit-driven industries to healthcare needs. The Linked Person Record for Cancer, developed for Cancer Care Ontario in 2007–2008, represents the kind of innovation required if healthcare information is to take advantage of advances in information management.

## Cancer Care Ontario

Cancer Care Ontario (CCO) is the provincial agency responsible for improving cancer services. As the government's cancer advisor, CCO directs over \$600 million in public funding for

**The Linked Person Record for Cancer**, developed for Cancer Care Ontario in 2007–2008, represents the kind of innovation required if healthcare information is to take advantage of advances in information management.

cancer prevention, detection and care.

CCO has long recognized that information management, performance management and business intelligence are vital to fulfilling its mandate. Since launching its first data warehouse in 2004, the organization has remained dedicated to developing and maintaining cutting-edge data management systems.

The first implementation of the enterprise data warehouse (EDW) consisted of a cancer surveillance data mart to track regional and provincial rates of cancer incidence, mortality and survival for the 20 most common cancers. Subsequent initiatives added data marts to track cancer treatment, drug funding, pathology reports and other related information. A web-based interface, iPort™, was developed as a highly secure and user-friendly gateway to critical cancer reporting information. In its first three years, the system's user base expanded to over 400 cancer planners, managers and clinicians, establishing iPort™ as a critical planning tool and a recognized brand within the cancer services community.

As the EDW program entered its fourth development phase

---

This editorial column supported by an educational grant from Adastra.

in August 2006, it met a serious challenge: users were unable to create integrated reporting across the various data marts. As a result, CCO could not provide a comprehensive view of an individual's journey across the cancer care continuum in the EDW. Different data sources had to be linked through custom analyses to allow cancer planners, managers and clinicians to assess clinical quality, understand service utilization and forecast service requirements.

**Solution Overview**

Expertise in data warehousing and master data management services was brought on board to build the first Linked Person Record for Cancer in North America. The objective was to create a master patient record, within the EDW, to uniquely identify each cancer patient across various encounters with the healthcare system. Using this master record as an anchor, individual information fragments about cancer patients arriving from disparate data sources can be linked, further enriching the master patient record and enabling tracking and reporting at all levels. After all incoming data is cleansed, standardized and enriched using reliable sources, a sophisticated combination of deterministic and probabilistic linking algorithms match patient records to the master record groups. In addition to automated matching of patient data, the solution aims to allow CCO staff to review matches labelled as incomplete and then manually associate patient records to the correct master record through an easy-to-use web-based interface. Of vital importance – to protect patient privacy, linked records are aggregate views; while the data is linked, the patient cannot be identified.

ability to provide an integrated view to the data consumers who make or guide these types of decisions.

Prior to the implementation of the Linked Person Record for Cancer, CCO's data consumers ran disparate reports from various data marts. Analysis required extensive manual integra-

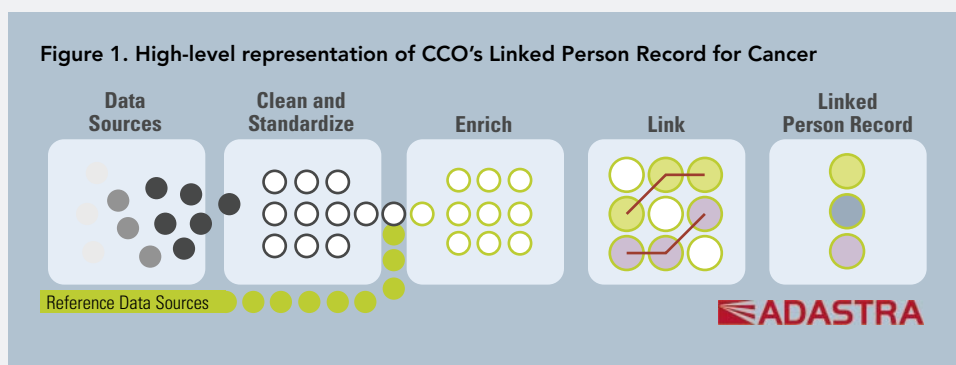
**Expertise in data warehousing and master data management services was brought on board to build the first Linked Person Record for Cancer in North America. The objective was to create a master patient record, within the EDW, to uniquely identify each cancer patient across various encounters with the healthcare system.**

tion work by analysts and statisticians using ad hoc methods and statistical software packages such as SAS and SPSS.

Once the Linked Person Record for Cancer is fully implemented, planners, managers and clinicians will have access to integrated reports that provide aggregated information already linked at the record level. This will facilitate an understanding of how cancer patients move across the continuum of care, while fully protecting the privacy of individual health information. For example, a cancer planner interested in where new treatment facilities will be required must first understand the socio-demographics of a population and the types of cancer they are

being diagnosed with, as well as the relationship between where people live and where they obtain treatment. This type of analysis helps planners determine if the incidence of cancer in a specific geographic region is rising more quickly than the regional availability of services appropriate to treatment. The information can also be used to support funding authorities in determining which regions will be most in need of investment in cancer treatment centres.

With the full implementation of the Linked Person Record for Cancer, the cancer planner will be able to log into iPort™ and build a region-specific report with specific incidence rates among a specific demographic, and with the related treatment those individuals received, as well as where and when they received it. If, for example, a significant number of people have to travel more than 50 km to receive required treatment, additional



**Business Impact**

Tracking regional and provincial cancer incidence, prevalence, mortality and survival along with linking this information with diagnostic, screening and treatment activity are critical to cancer services planning. Critical decisions on human resources, funding, capital planning and guidelines in evidence-based care, as well as quality and performance monitoring, rely on CCO's

services in that area may be required. The Linked Person Record for Cancer will facilitate this type of reporting.

### **A Model for Future Healthcare Solutions**

Data integration is vital to the success of healthcare planning and management. Just as the electronic health record (EHR) has proven essential for healthcare facilities striving to deliver effective

**This type of analysis helps planners determine if the incidence of cancer in a specific geographic region is rising more quickly than the regional availability of services appropriate to treatment. The information can also be used to support funding authorities in determining which regions will be most in need of investment in cancer treatment centres.**

care, the linked person record can empower those engaged in analytical and forecasting work. Such technology mitigates the need for guesswork in healthcare planning and can allow cancer system managers to focus their interventions by effectively targeting those areas most in need.

Profit-driven industries have realized the benefit of data integration, and customers, producers and distributors have come to rely on these technologies. In order to provide effective financial guidance, banks require a full view of their customers, who in turn demand an integrated view of their accounts and investments to enable planning and to maximize returns. Telecommunications providers also need to know their customers as fully as possible in order to effectively market new services, and customers increasingly demand flexible packaged services that require central management. In a global marketplace increasingly dependent on just-in-time delivery, retail and distribution networks require integrated views of inventory and sales, without which service and profits would suffer.

While the benefits of data integration for healthcare are self-evident, the industry has faced significant obstacles to successful data integration implementations. Healthcare data is most often housed in non-standardized and disparate sources, with different standards of quality and completeness and irregular delivery schedules. Whereas banks and other industries maintain control over mostly internal data sources, healthcare organizations – especially umbrella organizations such as CCO – rely almost entirely on external sources (hospitals, labs, treatment facilities, etc.) over which they have no direct control. Add to these challenges the sensitivity of healthcare information, and

it is no wonder the industry has been slow to fully adopt master data management (MDM).

The innovation of the linked person record solution lies in the approach. Using a series of steps, the team addressed and overcame MDM challenges specific to healthcare. Initially, it was important to understand the data. By combining data profiling, gap analysis and business analysis, the team developed an increased understanding of the data flowing into CCO. Based on this understanding, the next step was to create data cleansing and standardization procedures to align the data. Then, the data was enriched using a high-quality and reliable external source (in this case, provincial health insurance information). The final critical step was to apply a sophisticated combination of rule-based and statistical algorithms to match incoming patient record fragments. These fragment groups were then processed according to business rules, and the best, richest and most reliable information was combined into aggregate composite master person records representing actual cancer patients without identifying actual individuals. The master person records were subsequently loaded into the data warehouse to be used as a reference for the full information continuum.

The success of this implementation is due to several factors: CCO's commitment to improving its reporting capabilities, a well-developed in-house core of experienced subject matter experts with deep knowledge of cancer and healthcare data standards, and Adastra's expertise and creativity. Team members combined their rich MDM experience from other industries with their healthcare information management practices to tackle CCO's data integration challenges.

CCO is leading the way in leveraging electronic tools for data integration and MDM in the healthcare industry. As the first such solution for cancer data in North America, the Linked Person Record for Cancer is positioned to become an industry-leading example of a successful data integration implementation. The commitment to data integration at Cancer Care Ontario has resulted in a more holistic view of the individual journey through the healthcare system and a better understanding of the patient experience. Thus, data integration strategies such as the Linked Person Record for Cancer not only humanize the healthcare system, they also help support better decision-making to ensure that healthcare dollars are spent in the most effective way.

### **About the Author**

**Darren Edery** is Adastra Canada's CEO. Adastra, a global provider of data warehousing, business intelligence and master data management services, worked with Cancer Care Ontario to build the first Linked Person Record for Cancer in North America.

# YOU'RE COVERED



**ADASTRA HEALTH INFORMATION MANAGEMENT SOLUTIONS.**



Adastra brings extensive health care experience, cutting-edge cross-industry expertise, and dedicated health care resources to the design, development, and implementation of comprehensive health care data solutions.

 **ADASTRA**

[www.adastracorp.com](http://www.adastracorp.com)

# Transitioning Initial Success into Sustainable Results: The Future of the WTIS

Sharon Pfaff, Lynn Guerriero, Julian Martalog, Lindsay Arscott, Sandra Fontaine and Joseph Laforet

## Introduction

Getting a new concept or project up and running is never an insignificant undertaking. In many cases, however, the successful completion of a project signals the start of the “real work” in which the greater challenge is in turning that initial success and investment into results that can be sustained over the long-term. This was the challenge facing Cancer Care Ontario (CCO) once they developed and deployed the Wait Time Information System (WTIS) on behalf of the Ontario Ministry of Health and Long-Term Care (MOHLTC).

With the launch of the WTIS, the government, Local Health Integration Networks (LHINs), hospitals and patients had – for the first time – standardized, near real-time data to make more informed healthcare decisions and better manage access to critical health services. But much more work was ahead. The next step was to begin leveraging the technology and the wealth of data it provided to help drive significant performance improvements within the overall health system. The time had come to shift gears from an IT deployment project to a sustainable operations and information management program that could continue to provide value for the province.

This article looks at the future of the WTIS and describes the journey CCO has taken to establish a permanent Wait Time Information Program. These concepts will be of interest to leaders of or participants in information management/information technology (IM/IT) projects looking for ideas on how to smoothly transition a successful project into a sustainable operational program.

## Leveraging the WTIS to Meet More Needs

When the MOHLTC launched the Wait Time Strategy in 2004, the aim was to improve access to healthcare by reducing the time patients had to wait for procedures and treatments. To reduce wait times, the province first needed to solve an information problem. For the longest time, there had been no way of knowing how many individuals across Ontario were waiting for a specific procedure or how urgent their need was. Where information did exist, it was measured and gathered in different ways and available only retrospectively.

Based on its experience working with complex information systems for cancer services, CCO was asked by the MOHLTC to develop what would become the first electronic solution to collect and report wait time information from hospitals and clinician offices across the province – the Wait Time Information System (WTIS).

The initial focus was on reducing the time between when the decision to treat is made and when the treatment or procedure is actually completed (referred to as “Wait 2” in the strategy) for five priority areas identified by the government: cancer surgery, cardiac procedures, cataract surgery, hip and knee replacements and CT and MRI scans.

Under the direction of CCO’s Chief Information Officer, the WTIS progressed from concept to a Beta test to a fully implemented application in 81 hospitals across Ontario in less than two years. By June 2007, some 1,700 clinicians were using the system to capture wait times for an estimated 1.2 million procedures in the five initial service areas. Close on the heels of this

province-wide deployment, and responding to requests from clinicians and other stakeholders, the WTIS went through two major expansions to cover wait time reporting for all surgical areas. As of March 2009, the WTIS user base and number of procedures doubled in volume to approximately 3,300 clinicians and more than 2.2 million cases. In the meantime, wait times for the initial five areas started to show significant signs of improvement – down as much as 62% in the case of cataract surgeries.

Recognizing the value of the WTIS as a catalyst in reducing wait times for surgical and diagnostic imaging procedures, the government was now ready to take the application beyond the hospital walls to measure performance in other points of access to healthcare. The functionality has already been expanded to capture “Wait 1” – the length of time it takes to see a specialist upon referral from a physician – with a Pilot conducted in one LHIN. Now, work is under way to develop the system to support the collection of data for “Wait 3” – the time it takes for a patient to be discharged from an acute care setting or transferred to an alternate level of care (ALC).

With the ability to capture wait time data in near real-time, the flexibility to be configured to meet more data requirements and the capacity to integrate with existing hospital and provincial information systems, the WTIS holds great promise to be leveraged for the broader access to care agenda. Consolidating data to get a comprehensive view of trends across all access points would allow the government, LHINs and healthcare providers to make broad-based decisions on where and how best to target resources and bring about transformational changes across the entire health system.

With real plans and significant potential, it was clear that the demands on the WTIS – technically and operationally – would rise and evolve dramatically. With proven experience in operating and managing the WTIS, the MOHLTC asked CCO to continue hosting the program on behalf of the province and to determine the most appropriate model for long-term sustainability.

### **Understanding the Challenges in Moving from Project to Program**

After successful completion of a project it is logical and natural to institutionalize the program in order to maintain continuity and grow the operations. The one-time and finite characteristic of a project (i.e., to achieve a set deliverable within a defined start and end date), however, stands in contrast to a permanent program in which operational work and functions will need to continually evolve over time in line with changing business dynamics and stakeholder needs. The transition, therefore, can often be complex and impact the organization and its stakeholders in a number of ways that require careful consideration and management:

- **Impact on support.** Sponsorship, and often funding, is more readily available when starting up a new project. Once

project deliverables are met, focus and support tend to shift to other priority initiatives, making it difficult to maintain engagement and resources required to sustain a long-term program.

- **Impact on functions.** The operating model used by projects to achieve their defined deliverable cannot always be moved into an organization wholesale. A successful transition often requires the organization to first re-assess its core functions, processes, roles and competencies in order to ensure the capacity is there to absorb the work and support growth plans.
- **Impact on resources.** The organization needs to ensure it can cost-effectively accommodate the pace and demands of an evolving and growing program.
- **Impact on service.** Primarily the result of funding, projects can usually provide a certain level of focused support and expertise to system users and other stakeholders. For a program structure, an organization will need to determine how best to provide an appropriate level of support, often with limited resources, without compromising service.
- **Impact on stakeholders (primarily hospitals and clinicians).** As the system expands and evolves, the organization will need to consider the impact of these changes on hospital resources, workflow and systems, and how to support the hospitals in managing through the evolution.

With all of these variables in play, the move from a project state to an operational state is not one that can be made overnight. Planning needs to begin well in advance and must often be done in parallel with the work underway to meet short-term deliverables and day-to-day requirements. Despite the time and effort required to prepare for a transition of this nature, there are important benefits to investing in early planning.

### **Working with an Eye to the End State**

Creating the foundation for an eventual transition to a sustainable program for the WTIS was always an end goal for CCO. Working with this end state in mind, and recognizing that hospitals would require extensive upfront support, CCO took proactive steps to establish from the outset an in-house operations function known as the Wait Time Information Office (WTIO). The WTIO initiated a number of practices that were gradually refined throughout the course of the project, based on user feedback. These forward-thinking practices turned out to be critical success factors for the WTIS and would lay the groundwork for what would become the support model used by CCO for the Wait Time Information Program.

The WTIO worked closely with the WTIS project team to ensure that, when the time came, the transition from project to program could be as seamless as possible for both CCO and hospitals. This collaboration included the following activities:

### Initial operations support provided by CCO's Wait Time Information Office (WTIO)

- Stabilizing hospitals and end users on the application as it was implemented, which included the intricacies of managing user registration and system access rights
- Managing data collection (first through an interim manual process and then through the automated WTIS application) and compliance with wait time reporting requirements set out by the MOHLTC in Hospital Accountability Agreements
- Supporting hospitals' ability to use wait time information to manage wait lists, improve access to services and continually improve the quality of data
- Operating a help desk to provide hospitals with dedicated technical and business-related support. The help desk model was refined through the course of the project to respond in a timelier manner, including expanding hours of operation and applying a tiered system for general inquiries (Tier 1) and business-level support (Tier 2)
- Establishing and managing an operational privacy program in an environment where confidential personal health information was involved
- Managing the process for quarterly system releases to support operational enhancements to the application
- Gathering user feedback to apply toward system, reporting and operational process improvements

- **Joint planning.** Members of the WTIO were critical participants in project meetings to ensure operational requirements were factored into all WTIS project planning and decisions. Through this joint effort, the impact of project activities on operations functions and end users was kept top of mind.
- **Early knowledge transfer.** Including operations team members in meetings and decision-making also facilitated the early and gradual transfer of key learnings, materials and processes from project team members to operations team members.
- **Bridging the gap.** To maintain the integrity and momentum of the project, it was critical to ensure that upon "go-live," the transition of activities and support from the project team to the operations team was transparent to users. To ensure that the hand-off went smoothly, a sufficient transition period was built into the project plan, during which project and operations support and resources could overlap. During this period, project team members exchanged information with operations team members on hospital relationship styles, issues and concerns experienced during the deployment phase. This insight was critical in being able to bridge

the gap and maintain the appropriate level of support for the hospital, going forward.

- **Lessons learned/continuity in best practices.** Over the course of a large-scale initiative, a project team learns a lot about its stakeholders and the success of its activities. These learnings and practices, including what did or did not work well, were clearly documented and shared.
- **Setting expectations.** It was important for the project team to establish upfront with hospitals that the WTIS would not be a static application. It would evolve as the Wait Time Strategy matured and as operational requirements changed accordingly. Open channels of communication with hospitals and ongoing active solicitation of feedback from users ensured their concerns would be heard.

### Making the Transition

Building on the project learnings and initial operations experience, CCO began the complex process of establishing the permanent Wait Time Information Program (WTIP). While it was a natural evolution for the WTIS, CCO knew that, as the hosting organization, it would not be business as usual. The size and scope of the WTIS meant that the organization now needed to accommodate not only the cancer system, but also a larger-scale provincial program that touched a much broader stakeholder base.

CCO understood that, while the structure and operating model used for the project worked well, it could not just be brought into the organization "as is." The move to support the WTIP would involve a fundamental shift in cultural thinking within CCO, a thorough reassessment of the functions of the CIO portfolio, and proactive change management to support internal and external stakeholders through the transition.

In creating a new operating model for the WTIP, CCO needed to be able to meet the tactical needs for sustainable operational support for a growing user base and still allow the program to maintain its momentum and continue to deliver on its commitments to stakeholders. This meant that the WTIP would need to balance the support it provided to hospitals for ongoing timely data collection and the growing need to support hospitals in better utilizing wait time data for performance management. In addition, building on the relationships and goodwill created with hospitals, the WTIP would need to maintain a service-oriented approach to ensure physicians continued to be actively engaged in the effective use of the WTIS and wait time reports.

At the same time, the model needed to accommodate the more ambitious strategic goals for the WTIS, including prospects of future integration with other provincial and e-Health initiatives. This required that the model be scalable, in line with new and emerging opportunities.

Designing the optimal model would require an extensive look at a number of factors:

- How to migrate the functions that operated independently in the project and effectively integrate them into the existing CCO structure without duplicating effort?
- How to take an initiative supported by a large team of experts and build up internal capacity and expertise without losing the pace of a time-driven project or compromising service?
- How to ensure the organization could effectively manage costs and risks as demands and pressures grew?
- How the current requirements differed from the future requirements of the WTIP and would there be any gaps or areas that would face capacity and expertise constraints?
- Which project processes and tools worked well and could be re-used or improved upon?

To absorb the existing work of the WTIS, create increased capacity for service and prepare to support new opportunities in the area of healthcare transformation, CCO recognized that it would first need to make some fundamental changes to strengthen the overall organization. A strengthened organization would come from having well-integrated functions that would enable CCO to provide a coordinated and cohesive approach to common services and pivotal business planning areas, such as operational service delivery and customer relations management, strategic technology planning using a common information architecture and procurement and resource management. In addition, the organization would need to build up its business intelligence capability to support the increasing focus on performance management, as well as create stronger partnerships and alliances in the area of e-Health and explore strategic business development opportunities.

With the organizational functions identified, CCO set out to determine how the WTIP team should be structured. Over a six-month period, CCO conducted an in-depth review of the requirements for a program team. The review identified several roles and processes that were previously partially fulfilled through the overall project management function, and that would now require discrete focus, more rigour and greater accountability within a mature program. The WTIP structure emerged with four key areas working in alignment and collaboration under the leadership of an experienced program director:

- A **Product Management** stream to oversee the multi-year WTIS product roadmap and all application development to meet both operational and strategic changes. Managing the application scope and releases in a coordinated way ensures that the degree of change for the field can be contained.
- A **Deployment** stream to support hospitals through future large deployment initiatives as the WTIS expands into new areas.
- An **Operations and Support** stream to manage the day-to-day business operations for the WTIS, including business

processes, end user support and data quality and compliance. This team would include new “Clinical Liaison” and “Customer Service Management” roles to formalize the service orientation of the program.

- A **Program Support** stream, including a function to manage all WTIP controls and processes (such as change requests, and issue, risk and decision logs) as well as to coordinate overall program planning and requirements (such as contracts, procurement, budgets), and a communications team to ensure all stakeholders remain fully engaged in WTIP activities and informed about the program’s progress.

The final step in making the transition was for CCO to identify the leadership and staff and recruit where gaps existed. To support long-term sustainability, the focus was on recruiting permanent resources, as opposed to contract staff, to build in-house capacity, ensure knowledge retention and support talent management over the long-term. A solid transition period and opportunities for job shadowing and job-sharing enabled a smooth transfer of skills and knowledge between outgoing project members and incoming staff.

### Continuing the Evolution

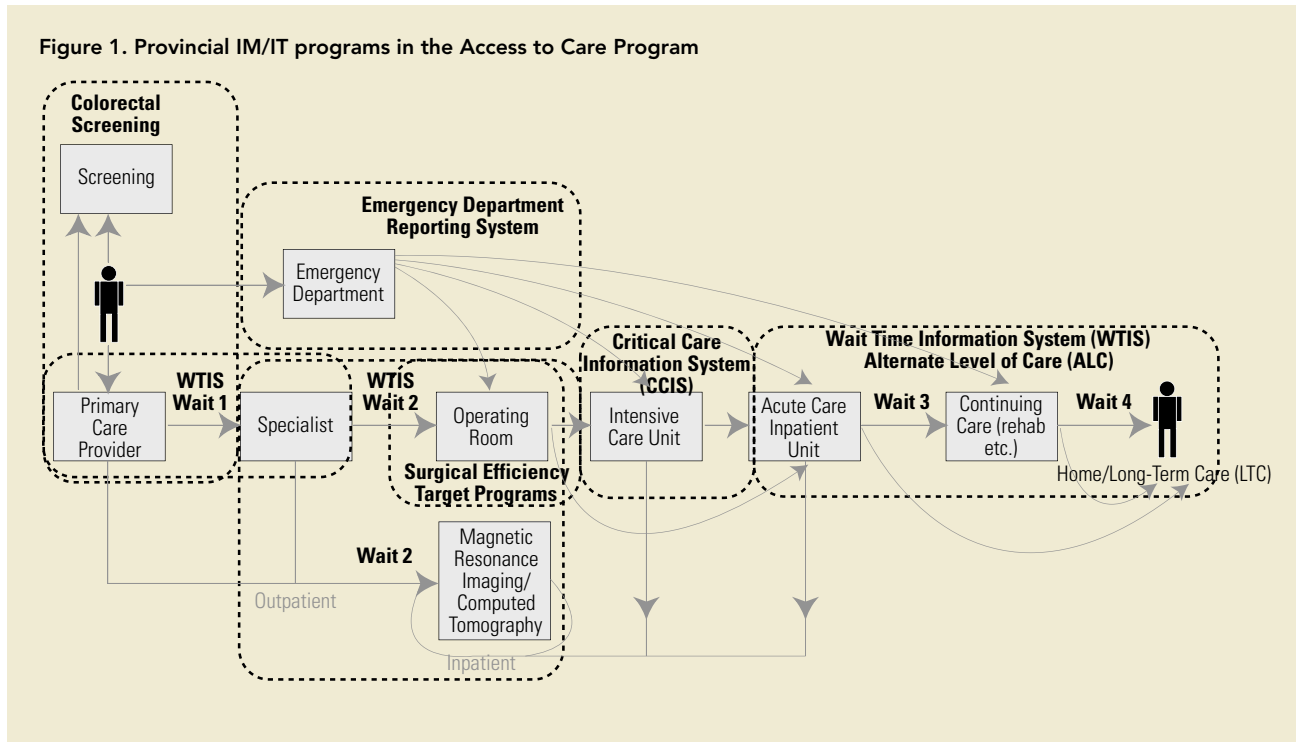
Understanding and anticipating the challenges in moving from a project to a program and proactive early planning were integral success factors in preparing CCO to build an in-house team and an application that could be sustained.

With the base structure, expertise and capacity in place, the WTIP will be able to optimize the foundation of the WTIS to continue to support the government’s Wait Time Strategy.

The team is currently working on building the system functionality to support the reporting requirements for the MOHLTC’s new ER/ALC Information Strategy. Reducing waiting periods for alternate levels of care (ALC) will address a systemic problem that contributes to bottlenecks in emergency rooms (ERs) due to a lack of available patient beds in hospitals. The hope is to be able to move patients out of hospitals faster into alternate care facilities and in turn, ease the pressure currently facing ERs in Ontario. The WTIP’s aim is to begin reporting this “Wait 3” data from Beta sites by mid-2010, with full province-wide reporting by spring 2011.

In line with the focus on managing performance, the WTIP is placing greater emphasis on supporting hospitals in better utilizing data at the grassroots level. The WTIP considers this an area where it can offer greater support through the sharing and implementation of best practices. Recognizing that this can be accomplished only through joint ownership with clinicians and hospitals, the WTIP will seek to strengthen these cooperative relationships.

Moving forward, the priorities and pressures for the WTIS will continue to be directed by input from the field. Feedback



from clinicians and other end users on what data are important to them will help inform the way the data is reported and how the system and operations program will evolve.

On a broader scale, CCO’s efforts to strengthen the organization in order to support the WTIP have also provided the platform for the organization to support other access to care programs and e-Health initiatives, such as the ER/ALC. As of January 2009, at the request of the MOHLTC and e-Health Ontario, CCO assumed executive sponsorship of the Critical Care Information System, Emergency Department Reporting System and Surgical Efficiency Targets Program. Similar to the WTIP, these programs are currently being transitioned and will be absorbed into the organization’s CIO portfolio.

The ability to consolidate operations and reporting for multiple provincial programs under one umbrella provides a valuable opportunity to gain a more fulsome view of improvement opportunities across the continuum of care. CCO will continue to explore opportunities to partner on IM/IT initiatives to increase integration between the WTIS and other information systems, with the objective of improving access to care and further supporting the province’s e-Health agenda (Figure 1). As the healthcare system and user demands continue to evolve and as new business opportunities continue to come into play, CCO is well positioned to respond.

**About the Authors**

**Sharon Pfaff** is the Deputy Chief Information Officer for Cancer Care Ontario (CCO), responsible for driving the implementation

and management of CCO’s Information Strategy. Prior to CCO, Sharon Pfaff was the CEO of Consolidated Health Information Services (CHIS), a not for profit corporation owned by Chatham-Kent Health Alliance (CKHA), Bluewater Health and Windsor Regional Hospital.

**Lynn Guerriero** is the Director of the Wait Time Information Program at Cancer Care Ontario. Lynn’s experience in health care includes leadership roles in acute care, rehabilitation and community care. She is an Occupational Therapist and a Certified Health Executive (CHE).

**Julian Martalog** is the Director of the Access to Care (ATC) Informatics department at Cancer Care Ontario. Julian has experience in information management with local, provincial and national organizations. He holds a Masters in Health Administration from the University of Ottawa and is a certified Health Executive with the Canadian College of Health Service Executives.

**Lindsay Arscott** is the Manager of Operations and Support and Privacy Lead for the Wait Time Information Program (WTIP) at Cancer Care Ontario. Lindsay has experience in data analytics, eHealth, and information and technology standards, and has worked on both national and provincial health IT projects.

**Sandra Fontaine** is Director, Portfolio and Performance Management at Cancer Care Ontario. Previously Sandra was the Project Management Office Lead for the Wait Time Information System project.

**Joseph Laforet** is an independant Project Manager specializing in complex healthcare implementations.

# With a View Toward the Future

Denise Zarn

**A**fter more than 35 years, my career has offered me a myriad of opportunities to participate in and advise on both projects and organizations. Each has its own story as well as its common attributes.

For Wait Times, I have had a great line of sight into this latest evolution of the project – moving from project mode to a fully operational model. The Wait Time Information System (WTIS) has been a unique project in many respects. The team of government, users, vendors and Cancer Care Ontario (CCO) staff collaborated to implement the WTIS across the province in tight time frames. The project's leader capitalized on a wide variety of attributes of successful initiatives that preceded the WTIS, utilizing the principles of solid project management and exhibiting a relentless focus on results, user involvement and transparency.

And now the program must evolve to a new stage in the life cycle, moving out of the project domain and into the mainstream of operations. This transition asks for new competencies, coupled with the same laser focus on results. The WTIS is, after all, still evolving, and enhancements to the system are continuing at a rapid pace, with new users, new procedures and new applications. To add complexity, the Ministry of Health and Long-Term Care has grown the Access to Care program to address emergency room length of stay and has asked CCO to expand the WTIS to support this component as well. Even as this expansion continues, the organization has been tasked

with the responsibility of creating an organizational design and staffing model that is sustainable and cost-effective, while retaining the agility and responsiveness that were hallmarks of the successful incubation of the WTIS.

**Projects require teams** and collaboration on many levels, but they are also stand-alone entities with a project mentality. They are successful in part because they are elevated out of the mainstream of an organization. But every successful project must accomplish the move from its project status either to wind down or to fully integrate within the organization.

Projects require teams and collaboration on many levels, but they are also stand-alone entities with a project mentality. They are successful in part because they are elevated out of the mainstream of an organization. But every successful project must accomplish the move from its project status, either to wind down or to fully integrate within the organization. In the case of the WTIS project, its early success transitions into the operational Wait Time Information Program (WTIP).

Many of the attributes of a successful project must be accommodated in the sustainment organization. For example, the articles in this journal have emphasized user involvement as a critical success factor in the implementation of the WTIS. User engagement is as essential in the permanent program model as it was in the project model. However, the emphasis has begun to shift from user input on system design and focus on implementation support to understanding customer satisfaction and ongoing user input to system enhancements and upgrades.

**In the previous two years, CCO has focused on updating its information strategy and has recognized the need to enhance its organizational design to support new demands. The challenge of accommodating those changes, while recruiting for a large number of positions and supporting the knowledge transfer from project staff, has created stresses and strains on the organization.**

System deployment must now incorporate routine maintenance and normal life cycle issues – where security patches, routine preventative maintenance and hardware upgrades must be part of the calendar – while minimizing the impact to users.

All of this work must be managed by a smaller group of permanent individuals who are willing to commit to the program without a specific time horizon. This means a new level of staff and resource management – attracting, training and retaining the right staff and giving them opportunities for career growth. The new performance paradigm requires people who are ready for the long haul, not only the series of almost breathless sprints that represented the previous pace and tone of the project.

The WTIS came to CCO both because of the agency's desire to improve cancer surgery wait times and a willingness to take a risk and participate in a project to improve outcomes in the larger health system. CCO also has a proven track record for complex, province-wide implementations. Projects such as the Pathology Information Management System, Computerized Physician Order Entry System and Collaborative Cancer Stage Capture demonstrated the organizational competencies for large projects. Only a few organizations in Ontario have the corporate DNA to support such work. CCO also included performance management as an essential tenet of its operating framework, and this experience would prove invaluable in rolling out the

WTIS and establishing the WTIP.

The ongoing sustainment and growth of the program – absorbing the project within the organization and growing the organization to envelop a project that increases staff and responsibilities by 100% or more – is now asking another competency from CCO.

In the previous two years, CCO has focused on updating its information strategy and has recognized the need to enhance its organizational design to support new demands. The challenge of accommodating those changes, while recruiting for a large number of positions and supporting the knowledge transfer from project staff, has created stresses and strains on the organization. Changes in leadership occurred both within the program and within CCO's CIO portfolio that houses it. So far, the model has worked and the organization has demonstrated that the preparatory work of strengthening the internal organization has paid off.

The benefit for CCO has been in building its capacity for sustained management so that the organization can continue to take on new challenges and support the use of data retrieved through the WTIS for performance management, creating a culture of accountability and proving the transformative power of information.

Healthcare often falls short in achieving the desired outcomes from information management/information technology projects. The health system landscape is littered with projects abandoned because they failed to deliver value early enough to sustain the support required to make it through the long haul, or projects that dwindled after the initial implementation because, once the spotlight moved to the user, support disappeared.

It is in this transition period that CCO is offering a true measure of its capabilities.

### **About the Author**

**Denise Zarn** served as Acting CIO for CCO from October 2008 to May 2009. Denise was a senior executive in the healthcare practice of a major consulting firm, with experience across Canada and in the US. She led the first major, successful Computerized Physician Order Entry project in Canada more than 20 years ago. She is now an independent consultant.

# Investing in Health IT: A Stimulus for a Healthier Canada

Peter Neupert

Information technology (IT) is widely acknowledged to be a critical component of improving healthcare in Canada. Across the country a great deal of work has already been accomplished in this area, and Canadians have repeatedly proven themselves to be global leaders in the health IT field: from pioneering initiatives, such as the Ontario Telemedicine Network and Prince Edward Island's Drug Information System (DIS) to the national-level investment agency Canada Health Infoway, which has, among other goals, set as an "infostructure" priority the availability of a baseline electronic health record (EHR) for all Canadians by 2012 (Canada Health Infoway 2008).

One of the fundamental principles of health IT – in Canada and much of the industrialized world – is the creation of a totally connected, patient-centred healthcare system. In this article, I put forward a vision of what such an ecosystem might comprise, and I explain how technology can bring it about by encouraging better outcomes and innovation, linking patient data and empowering individuals to be stewards of their own health. I then outline ways in which the public and private sectors can work together to create an efficient, data-driven system – one that benefits patients, healthcare providers and the overall Canadian economy. I conclude by illuminating some of Microsoft's investments in health IT.

## The Future: Canada's Health System Transformed by Technology

Real-time, unified data is the asset that drives an efficient, high-quality, value-based, evidence-focused future for medicine.

Adhering to this principle, at Microsoft we envision a dynamic, patient-centred healthcare system that transforms the way physicians provide care and individuals manage their own health – a totally connected network that delivers predictive, preventive and personalized care in an accessible, affordable and accountable way. Specifically, we see

- Patients experiencing more control, more convenience and better service;
- Physicians getting the right data in the right format at the right time to provide the best care;
- New interactions among the key members of the healthcare ecosystem: physicians, patients, pharmacists, allied health professionals, researchers, health ministries, regional health authorities, hospital administrators, insurance providers and others benefiting from a new flow of data to make better, faster decisions;
- Healthcare extended to the virtual space: patients getting care when they want it, wherever they need it, thanks to virtual medical clinics, virtual doctor visits, virtual lab results, medical homes and personalized medicine based on genomic data;
- A learning healthcare system that measures everything, identifies errors, and makes improvements in order to deliver value (on this objective, see Institute of Medicine [IOM] Roundtable 2008).

In this rapidly emerging world, everyone in the health ecosystem will have the right information at the right time, along with

computer-assisted decision support and the ability to seamlessly exchange and reuse data.

### **The Blueprint: Building a Scalable, Patient-Centred Health IT System**

While IT is vital for improving Canada's healthcare system, simply spending more money on it, without considering all the factors driving behaviour (e.g., of physicians, nurses and patients), is unlikely to lead to the premier goal: better health outcomes. History is strewn with investments in technology that did not lead to better health outcomes, let alone increased access or lower costs.

Across the healthcare sector today, however, there are many examples of successful technology investments. On behalf of Ontario's Ministry of Health and Long-Term Care, for instance, Cancer Care Ontario (CCO) developed the Wait Time Information System (WTIS), an Internet-based system that, since its deployment in 2007, has helped shorten patients' waiting time by up to 62% (CCO 2008). Canada Health Infoway (2008), meanwhile, cites various exemplary instances: in British Columbia, Fraser Health's hospital-based digital diagnostic imaging system; in Saskatchewan, a computerized registry for tracking and monitoring patients who need surgery; and, in Ontario, Grand River Hospital's portal for cancer patients. The leaders of the organizations responsible for these health IT innovations thought about clear outcomes and embraced technology on many different levels in order to drive improved care quality and efficiency as well as, in several cases, cost reductions. In essence, they created patient-centred systems – precisely the kinds of successes that need to be scaled nationally.

### **Driving the Right Health Outcomes and Payments to Encourage Innovation**

An industry focused on lifelong wellness and healthy outcomes would reward caregivers when diseases and conditions do not develop.

For the most part, however, Canada's healthcare system – like most others around the globe – is designed to care for people who are ill, not to keep people healthy. Take, for example, diabetes; currently the major emphases are on episodic treatment and medication, instead of on asking how we can raise awareness of risk factors and prevent people from developing diabetes in the first place. The system is this way because there is no means of rewarding physicians who provide preventive care.

The majority of private-practice family physicians are remunerated on a fee-for-service basis. These fees are negotiated between provincial/territorial governments and medical associations, and physicians bill their provincial/territorial health insurance plans for each patient service they deliver, regardless of the quality of care they provide. In this system, there are few

incentives for providers to improve satisfaction. Physicians who attempt to innovate – for example, by investing in IT to collect data from patients remotely – end up delivering better care but making less money.

In health-related areas where prices are set by the market, such as veterinary medicine, dentistry and non-essential cosmetic surgery, providers do a much better job of investing in services that attract consumers. For example, pet owners willingly pay for veterinarians who make house calls, maintain electronic medical records (EMRs), remind owners to bring their pets in for scheduled vaccinations, call to make sure the pets are taking their pills and are available for e-mail or telephone consultations. Because veterinarians compete on price and quality, they are constantly looking for innovations that allow them to provide better service and to improve customer satisfaction. And because technology is often a source of innovation, veterinarians are quick to embrace new technologies that fuel better service and patient care. I do not advise simply replicating these examples for human healthcare, but I believe we ought to learn from them.

### **Connecting and Sharing Data among and between Health Entities**

The first step is to connect the many medication lists, laboratory test results and diagnostic images that are already maintained electronically. Eventually, Canadian jurisdictions can build a lifetime record of treatments, prescriptions and tests that allows individuals and healthcare providers to improve medical decisions, reduce wasteful spending and increase the quality of care.

Canada's healthcare system is built around the idea of a specific provider prescribing specific treatment for a specific condition. Patients' health data is frequently confined to individual providers' information systems (whether electronic or paper-based); consequently, physicians must often make treatment and prescription decisions without all available clinical data, or else waste time and resources attempting to aggregate data. Graphic evidence of this problem came to light in a study conducted among elderly people in Quebec of the merits of computerized decision-making support for drug management. During the course of their study, researchers found that, on average, patients received prescriptions from at least three physicians in addition to their primary care doctors (Tamblyn et al. 2003).

One of the leading benefits cited in the 2006 pan-Canadian EHR policy conference report *Beyond Good Intentions* was "improved communication between providers, and between providers and patients" (Canada Health Infoway and Health Council of Canada 2006: 4). The right investments in health IT can improve care by offering patients and their physicians a comprehensive picture of a patient's health history. According to a 2007 cross-Canada survey, nearly 30% of physicians used electronic means to consult with each other about their patients'

shared treatment plans and health needs (Canadian Institute for Health Information 2008). This finding is heartening and points us in the direction the system as a whole needs to travel.

Consider, for example, the benefits that would accrue in the area of chronic diseases. In the US, around 40% of the population suffers from chronic diseases, and these people consume approximately two thirds of all healthcare spending (Shine 2002; IOM 2001). Health service researchers view these proportions as transportable to Canada and have crunched the numbers accordingly: in 2007, they calculate, the cost of caring for the 12–14 million Canadians with chronic diseases amounted to about \$100 billion each year, out of a total healthcare budget of \$150 billion (Leonard et al. 2008b). Even though most care for chronic diseases occurs at home, data from at-home care is not integrated with information available at the hospital or at the doctor's office. Individuals and providers would all benefit if, for example, patients with diabetes could upload their blood glucose readings to a website that offered personalized advice and guidance, receive information alerts regarding changes in recommended treatment or behaviour, share their results with a supportive community of fellow patients and securely transmit readings to their clinician. Patients would have more information on how to manage their conditions, would be in a better position to prevent acute incidents and would need to make fewer trips to the doctor. Treating physicians would have a greater ability to understand their patients' health over time, allowing them to identify the best treatment for existing patients and to help people who are at risk of developing the disease in the future.

### **Empowering Consumers to Be Stewards of Their Own Health Data**

Finally, we need to empower people to manage their health data. Just as credit scores represent a lifetime of active and passive financial decisions and transactions, so should health data. We must help individuals to start building their health data into a lifelong asset, to manage it over time and to share it with those who support them in making key decisions both within and outside of the health system.

Today, in order to manage their health, people must deal with both paper documents and electronic files. They fill out form after form, calling multiple doctors' offices for appointments. Few have the resources to keep track of medication lists, vaccination histories, appointment calendars, lab results, diet plans, exercise schedules and all the other components of health data. Many have little knowledge of how to prevent disease and slim, if any, support for managing their healthcare. "Without detailed information (or results)," experts have recently argued,

"it is difficult for patients to enter into a dialogue with their doctor about treatment because the healthcare provider is the only one with the information" (Leonard et al. 2008).

Now, imagine if people could, instead, connect all their health and wellness data electronically, share it securely from provider to provider and keep it in one place over time, no matter the health practitioner or the province/territory in which they lived and received care. They could share data with their support systems and make better health decisions for themselves and their families.

Technology can make this vision a reality. The Internet and online social networks have already become everyday resources for people seeking information in order to make health decisions. Missing, however, is a way to link this information back to an individual's personal health history. Canadians, though, are poised to close that gap:

- Canada ranks among the top 15 countries in terms of e-readiness<sup>1</sup> (Economist Intelligence Unit 2007).
- In 2005, the Canadian Internet Use Survey found over a third of all adults – approximately 8.7 million – used the Internet to search for medical or health-related information (Underhill and McKeown 2008).
- Nearly 90% of Canadians support the development of EHRs (EKOS 2007).
- 87% believe EHRs will enhance the speed and accuracy of diagnoses (EKOS 2007).
- 84% endorse the potential of being able to access their medical records electronically (EKOS 2007).

As a first step toward consumer empowerment, we could enable providers to give patients electronic copies of any data that is already available in electronic format. Offering consumers access to their healthcare data in a secure and private way, and allowing them to keep their data in one place over time and share them from provider to provider, will permit consumers to make better decisions about their health (for an example, see Earnest et al. 2004). It will also enable healthcare professionals to deliver better care. And it could save the Canadian healthcare system as much as \$5 billion per year (Leonard et al. 2008a).

### **The Next Steps: Recommendations for Moving Forward**

Microsoft has learned a great deal over the past several years as we have worked to improve healthcare through IT. We know that just spending more money on health IT will not solve the healthcare system's problems. Instead, the right investments are those

<sup>1</sup> E-readiness is "the 'state of play' of a country's information and communications technology (ICT) infrastructure and the ability of its consumers, businesses and governments to use ICT to their benefit" (Economist Intelligence Unit 2007: 1).

that focus on the right outcomes. It is therefore essential that data is connected and shared so that individuals and healthcare organizations can build their health data assets over time.

To achieve this vision will require that public- and private-sector organizations take several steps, including:

**Encourage innovation in health IT by setting out objective goals and criteria, not by mandating specific technologies or development models.** Hundreds of innovative health IT products and services are available on the market today, and many companies are investing large sums to develop new technologies and solutions. Even as they compete in this vibrant R&D space, however, companies are collaborating to enable their products to work together and share information regardless of their underlying development, licensing or business models. To take but one example, Microsoft's HealthVault – an Internet-based data storage and sharing platform for patients – can interface with other consumer health and healthcare information management systems.

As Canada's federal, provincial and territorial governments consider how best to spur the broad adoption of health IT systems, they should take care not to mandate or prescribe any particular technology or development model. Doing so could deprive healthcare providers of the best available solutions, exclude scores of companies and workers from competing to supply these solutions and weaken incentives for further private-sector investment and R&D. To the extent health ministries – as well as regional health authorities – seek to influence the development or adoption of health IT systems, they should set forth objective, technology-neutral goals and criteria that these systems should meet, such as those relating to security, privacy, interoperability and total cost of ownership. They should then open the door to all companies to compete for the opportunity to supply health IT solutions that satisfy these criteria.

**Reward innovative doctors who make the Internet the foundation of the patient–physician connection.** The Internet has created a society that has access to – and demands further access to – up-to-date information around the clock. Patients need information about their medical conditions, appropriate drugs or treatments, pre-procedure instructions and post-visit follow-ups. The Internet is the most efficient way for physicians to provide the trusted information patients want, and physicians should be encouraged to embrace basic Internet technologies that allow them to communicate more effectively and consistently with their patients. But the general nature of physician reimbursement means that innovative doctors have no incentive to deliver this kind of additional service. On this account, in a study of Toronto-based family physicians' responses to their patients' use of the Internet to learn more about their health issues, researchers counselled that “tangible incentives” (financial and other kinds) could potentially promote physician engage-

ment with this new care modality (Ahmad et al. 2006).

**Provide incentives for sharing data.** It is critical to connect data seamlessly and to empower individuals to take control of their health and wellness. We hope that Canada's governments will facilitate the transformation of health data into a vital asset by removing barriers to data sharing and by providing incentives for data exchanges that reduce costs, increase value and improve care quality.

**Focus on making data interoperable today, not waiting for standards tomorrow, and insist that vendors separate data from applications.** Microsoft is committed to developing interoperability standards – something called for by Canadian political leaders as long ago as 2000 (Canada Health Infoway 2008) – and we are working diligently with the rest of the IT industry to reach a consensus on those standards. Currently, data is too often used for a single application or a single purpose and thrown away once that purpose is complete. We can, however, use metadata – the details that describe the data and how they have been captured – to ensure data is kept alive and made available for reuse, no matter what its original applications or purposes were. In this regard, the benefits associated with the use of Microsoft's Amalga in the US – including reduced errors, more efficient care and more effective ways to treat patients – underscore the urgent need for interoperable health IT. By insisting that vendors supply IT that allows data transfers to and from other non-vendor applications, we can get data moving better and faster between different systems today, without waiting for standards that might take years to complete.

**Enable the private sector to develop an information infrastructure that connects data, systems and people.** To move from today's fragmented delivery system to tomorrow's connected network, we need technology infrastructure – “plumbing” – that allows data to flow freely throughout the system and be reused. Without it, we will recreate our disconnected paper system in the virtual space. This infrastructure must satisfy four criteria:

- Flexibility – to enable many different players across the ecosystem to do what they need to do;
- Interoperability – to leverage existing standards and infrastructure investments that work toward more unified ways of organizing and sharing data;
- Scalability – to adapt to the rate of medical and technology advances;
- Security/privacy – to foster patients' trust.

And so EMRs should not be seen as a panacea; they are only one part of the solution. We must, instead, facilitate connecting and sharing of data by consumers and large health systems to help them build their health data assets.

### Moving Patient-Centred Health IT Forward

At Microsoft, we concur with the view that “the Canadian health care system is characterized by two trends: the emergence of e-health and a shift from paternalistic-type medicine to a consumer-based approach” (Urowitz et al. 2008). Looking toward the future, we foresee a dynamic technology R&D landscape in Canada that will create new knowledge, applications and jobs, as well as further investment, throughout the country’s IT and healthcare sector. By collaborating on efforts to drive patient-centred change throughout the healthcare system, Canada’s public- and private-sector healthcare planners, providers and innovators will, we are certain, develop a new generation of software and services that support and speed the move toward efficient, data-driven care.

#### Microsoft’s Role in WTIS

- WTIS is a Microsoft .NET based solution. It utilizes SQL Server, BizTalk Server and BizTalk Server HL7 Adapter.
- The successful implementation of the solution under very aggressive timelines was a result of close cooperation of CCO, Accenture, Avanade, and Microsoft teams.
- WTIS is an example of how a consortium of complementary companies working closely with a client can yield outstanding results.

### References

- Ahmad, F., P.L. Hudak, K. Bercovitz, E. Hollenberg and W. Levinson. 2006. “Are Physicians Ready for Patients with Internet-Based Health Information?” *J Med Internet Res* 8(3): e22. Retrieved March 6, 2009. <<http://www.jmir.org/2006/3/e22>>.
- Canada Health Infoway. 2008. 2015: *Advancing Canada’s Next Generation of Healthcare*. Toronto: Author. Retrieved March 3, 2009. <[http://www2.infoway-inforoute.ca/Documents/Vision\\_2015\\_Advancing\\_Canadas\\_next\\_generation\\_of\\_healthcare\[1\].pdf](http://www2.infoway-inforoute.ca/Documents/Vision_2015_Advancing_Canadas_next_generation_of_healthcare[1].pdf)>.
- Canada Health Infoway and Health Council of Canada. 2006, June 11-13. *Beyond Good Intentions: Accelerating the Electronic Health Record in Canada*. Summary of main themes and highlights at a policy conference, Montebello, Quebec. <<http://www.healthcouncilcanada.ca/docs/papers/2006/infoway.pdf>>.
- Canadian Institute for Health Information. 2008. *Health Care in Canada 2008*. Ottawa: Author. Retrieved March 6, 2009. [http://secure.cihi.ca/cihiweb/products/HCIC\\_2008\\_e.pdf](http://secure.cihi.ca/cihiweb/products/HCIC_2008_e.pdf).
- Cancer Care Ontario. 2008. *Cancer Care Ontario Information Strategy 2008-2011*. Toronto: Author. Retrieved March 18, 2009. <[http://www.cancercare.on.ca/images/documents/CCO\\_Information\\_Strategy\\_2008\\_2011.pdf](http://www.cancercare.on.ca/images/documents/CCO_Information_Strategy_2008_2011.pdf)>.
- Earnest, M.A., S.E. Ross, L. Wittevrongel, L.A. Moore and C. Lin. 2004. “Use of a Patient-Accessible Electronic Medical Record in a Practice for Congestive Heart Failure: Patient and Physician Experiences.” *Journal of the American Medical Informatics Association* 11(5): 410–17.

Economist Intelligence Unit. 2007. *The 2007 E-readiness Rankings: Raising the Bar*. London: The Economist.

EKOS Research Associates. 2007. *Electronic Health Information and Privacy Survey: What Canadians Think – 2007*. Ottawa: Author. Retrieved March 5, 2009. <[http://www2.infoway-inforoute.ca/Documents/EKOS\\_Final%20report\\_EN.pdf](http://www2.infoway-inforoute.ca/Documents/EKOS_Final%20report_EN.pdf)>.

Institute of Medicine. 2001. *Crossing the Quality Chasm: A New Health System for the 21st Century*. Washington, DC: National Academy Press.

Institute of Medicine Roundtable on Evidence-Based Medicine. 2008. *Learning Healthcare System Concepts v. 2008*. Washington, DC: Institute of Medicine of the National Academies. Retrieved March 5, 2009. <<http://www.iom.edu/Object.File/Master/57/381/Learning%20Healthcare%20System%20Concepts%20v2008.pdf>>.

Leonard, K.J., M. Casselman and D. Wiljer. 2008a. “Who Will Demand Access to Their Personal Health Record? A Focus on the Users of Health Services and What They Want.” *Healthcare Quarterly* 11(1): 92–6.

Leonard, K.J., D. Wiljer and S. Urowitz. 2008b. “Yes, Virginia, There Are System Benefits to Be Gained from Providing Patients Access to Their Own Health Information.” *Healthcare Quarterly* 11(4): 23–5.

Shine, K.I. 2002. “Health Care Quality and How to Achieve It.” *Academic Medicine* 77(1): 91–9.

Tamblyn, R., A. Huang, R. Perreault, A. Jacques, D. Roy, J. Hanley, P. McLeod and R. Laprise. 2003. “The Medical Office of the 21st century (MOXXI): Effectiveness of Computerized Decision-Making Support in Reducing Inappropriate Prescribing in Primary Care.” *CMAJ* 169(6): 549–56.

Underhill, C. and L. McKeown. 2008. “Getting a Second Opinion: Health Information and the Internet.” *Health Reports* 19(1): 65–9. Retrieved March 7, 2009. <<http://www.statcan.gc.ca/pub/82-003-x/2008001/article/10515-eng.pdf>>.

Urowitz, S., D. Wiljer, E. Apatu, G. Eysenbach, C. DeLenardo, T. Harth, H. Pai and K.J. Leonard. 2008. “Is Canada Ready for Patient Accessible Electronic Health Records? A National Scan.” *BMC Medical Informatics and Decision Making* 8(33). Retrieved March 6, 2009. <<http://www.biomedcentral.com/1472-6947/8/33>>.

### Editor’s Note

Peter Neupert is Microsoft’s Vice-President for health strategy. Formerly responsible for MSNBC and the Lead executive at Drugstore.com, he has served on the (US) President’s Information Technology Advisory Council and has made several presentations to Congress. We appreciate his ability to consider the Canadian scene and provide this perspective on investing in Health IT a stimulus for a healthier Canada.

Tom Closson, editor in chief

*We gratefully acknowledge the tremendous efforts of all hospital leaders, project teams, project managers, WTIS coordinators and all participating clinicians and administrative staff at all WTIS hospitals **for helping to improve access to care across Ontario.***

Alexandra Hospital	Ottawa Hospital
Bluewater Health	Pembroke General Hospital Inc.
Brant Community Healthcare System	Perth and Smiths Falls District Hospital
Brockville General Hospital	Peterborough Regional Health Centre
Cambridge Memorial Hospital	Public General Hospital Society of Chatham
Carleton Place and District Memorial Hospital	Queensway Carleton Hospital
Children's Hospital of Eastern Ontario	Quinte Health Care Corporation
Clinton Public Hospital	Riverside Health Care Facilities Inc.
Collingwood General & Marine Hospital	Ross Memorial Hospital
Cornwall Community Hospital	Rouge Valley Health System
Credit Valley Hospital	Royal Victoria Hospital of Barrie
Dryden Regional Health Centre	Sault Area Hospital
Grand River Hospital	Scarborough Hospital
Grey Bruce Health Services	Sioux Lookout Meno-Ya-Win Health Centre
Guelph General Hospital	South Bruce Grey Health Centre
Halton Healthcare Services	Southlake Regional Health Centre
Hamilton Health Sciences	St. Joseph's Health Care London
Hanover and District Hospital	St. Joseph's Health Centre Toronto
Headwaters Health Care Centre	St. Joseph's Health Services Assoc. of Chatham
Hôpital Montfort/Montfort Hospital	St. Joseph's Healthcare Hamilton
Hopital regional de Sudbury Regional Hospital	St. Mary's General Hospital
Hospital for Sick Children	St. Michael's Hospital
Hôtel-Dieu Grace Hospital	St. Thomas Elgin General Hospital
Hôtel-Dieu Hospital (Kingston)	Stevenson Memorial Hospital
Humber River Regional Hospital	Stratford General Hospital
Huron District Hospital	Strathroy Middlesex General Hospital
Joseph Brant Memorial Hospital	Sunnybrook Health Sciences Centre
Kensington Eye Institute	Temiskaming Hospital
Kingston General Hospital	Thunder Bay Regional Health Sciences Centre
Lake of the Woods District Hospital	Tillsonburg District Memorial Hospital
Lakeridge Health Corp	Timmins & District Hospital
Leamington District Memorial Hospital	Toronto East General Hospital
Lennox and Addington County General Hospital	Trillium Health Centre
London Health Sciences Centre Qpiewurpew	University Health Network
Markham Stouffville Hospital Corporation	West Parry Sound Health Centre
Mount Sinai Hospital	William Osler Health Centre
Muskoka Algonquin Healthcare	Wilson Memorial General Hospital
Nigara Health System	Winchester District Memorial Hospital
Norfolk General Hospital	Windsor Regional Hospital
North Bay General Hospital	Women's College Hospital
North York General Hospital	Woodstock General Hospital
Northumberland Hills Hospital	York Central Hospital
Orillia Soldiers' Memorial Hospital	University of Ottawa Heart Institute

## Thanks to you...

**Patients** have improved access to care as well as wait time information to better manage their own care... **more than 2.2 million surgical procedures and MRI/CT scans are being captured in the WTIS.**

**Clinicians** have tools, processes and data to provide consistent and timely care... **3,300+ clinicians and their staff are using the WTIS to capture wait time data.**

**Hospitals** have access to near real-time data to better allocate resources and meet provincial wait time targets... **86 wait time funded hospitals are capturing 85% of the adult and paediatric surgical procedures in the province.**

The health system is increasing and continues to improve access to care across the province... **nine out of 10 Ontarians are being treated within the provincial target time.**



A funny thing happens when  
information travels faster  
between healthcare providers.

Patient care  
improves.

Increasing the speed and quality of information, while making it available whenever and wherever it is needed, is **xwave** Healthcare's primary job description. To do that job we now have more than 300 medical, technical and business consultants, and everything we do is guided by an advisory board comprised of physicians. So it's no wonder that the solutions we've developed allow medical practitioners to put their focus where it belongs. Focusing on patient needs, preventive care opportunities, chronic disease management, decreasing wait times and improved clinical outcomes has allowed **xwave** Healthcare to become one of the leading iEHR system integrators in Canada.

For more information, please call us at 1.877.449.9283  
or visit [xwave.com/healthcare](http://xwave.com/healthcare)

**xwave**  
HEALTHCARE

©2008 Accenture. All rights reserved.

seeing things simply  
50%

seeing things fully  
50%



## We know what it takes to be a Tiger.

High performers combine razor-sharp strategic focus with a thorough command of the details. For a deeper look at our research and experience with the world's most successful companies, including our landmark study of over 500 high performers, visit [accenture.com/research](http://accenture.com/research)

• Consulting • Technology • Outsourcing

>  
**accenture**

*High performance. Delivered.*