REPORT OF THE CANCER SURGERY EXPERT PANEL

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Expert Panel Chair

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CONTENTS

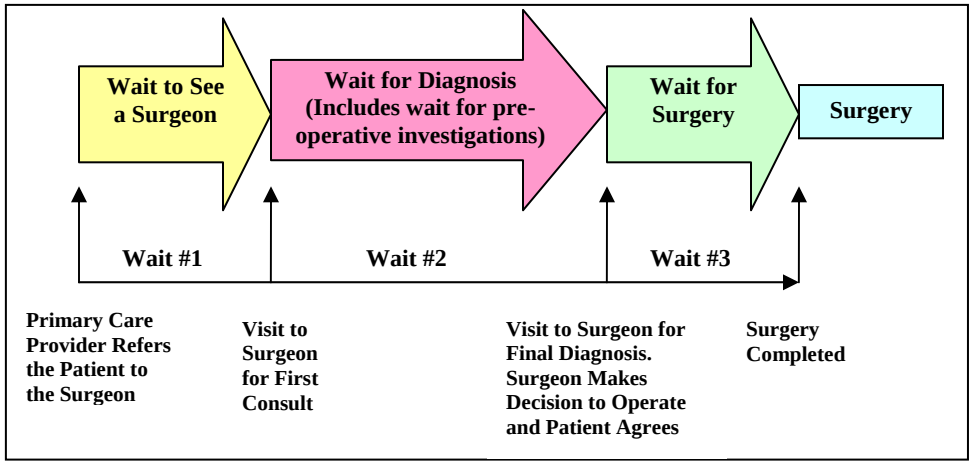
EXECUTIVE SUMMARY

Surgery is a major component of cancer care and is usually needed to determine if a tumour is cancerous or not. Surgery may also be required to evaluate the stage of disease, and as a definitive treatment to remove a malignant growth. Approximately 80% of patients with cancer undergo a surgical procedure to diagnose, stage or treat cancer. Surgery is the main curative treatment for the majority of cancer patients. Since surgery is most often the first point of entry into the cancer treatment system, waiting for surgery can impact on the entire patient journey.

Cancer surgery is one of the five priority services in Ontario's Wait Time Strategy. Dr. Alan Hudson, Lead of Access to Services and Wait Times for the Ministry of Health and Long-Term Care (Ministry), asked Cancer Care Ontario (CCO) for its advice on allocating additional surgical volumes and developing an accessible, high quality cancer surgery system. As the advisor to the Ontario government on all aspects of cancer care, CCO is well positioned to identify criteria for additional surgical volumes and the hospitals that should receive incremental funding, and advise government on ensuring equitable access to safe cancer surgery in a timely and appropriate manner. CCO is providing its advice to the Minister of Health and Long-Term Care, George Smitherman, through Dr. Hudson.

CANCER CARE ONTARIO'S DEFINITION OF WAIT FOR CANCER SURGERY

The wait time for cancer surgery includes a series of waits. For the purposes of the Wait Time Strategy – which is focused on surgical wait times – CCO identified the wait for cancer surgery as being from the day the surgeon makes the decision to operate and the patient agrees with the decision, to the day the cancer surgery is completed (Wait #3).



CANCER CARE ONTARIO'S ASSESSMENT OF THE MINISTRY'S SHORT-TERM SOLUTIONS TO REDUCE WAITS FOR CANCER SURGERY

The Ministry's solution to reduce waits for cancer surgery included funding 1,700 more cancer surgeries from December 2004 to March 31, 2005, and 4,800 cancer surgeries in

fiscal 2005/06. For the 2004/05 allocation, CCO advised the Ministry on appropriate funding criteria and the allocations for each hospital. For the 2005/06 allocation, CCO played a leadership role advising the Ministry on additional funding criteria, developing a methodology to allocate new funds, identifying hospitals to receive new cases in 2005/06 and hospital-specific volume targets, and suggesting the distribution of additional volumes by specialty and intensity levels for each hospital.

Since cancer surgery represents over a hundred different diseases, each with different complexities, it was challenging to develop a methodology to allocate funds. Consistent with the Wait Time Strategy, the funds were used to meet short-term requirements for additional cancer surgeries and set the stage for longer-term improvements. As a condition of funding, hospitals were required to sign Cancer Surgery Agreements with CCO that linked additional cancer surgery volumes with quality improvement initiatives, clear accountabilities for performance, and the development of regional cancer programs. The Regional Vice-Presidents of Cancer Services actively worked with hospitals in their regions to identify difficulties completing cases and develop solutions to meet the agreed-upon targets.

CANCER CARE ONTARIO'S DELIBERATIONS AND RECOMMENDATIONS ON A PROVINCIAL PLAN TO PROVIDE EQUITABLE ACCESS TO QUALITY CANCER SURGERY IN A TIMELY AND APPROPRIATE MANNER

Cancer Care Ontario identified six elements of a provincial cancer surgery plan.

1. Best Practice Targets and Approaches to Support Standardisation

CCO supports the need to develop ***population-based planning targets*** for cancer surgery. Well-developed targets can highlight surgical variations that need to be explored, identify potential inequities in access between Local Health Integration Networks (LHINs), and help focus efforts on reducing inappropriate variations in service. CCO recommends that the Ministry support the development of population-based planning targets for the number of cancer surgeries per 100,000 population in Ontario, adjusted by age and cancer incidence. This work should take into account relevant research, the experience of other jurisdictions and the expert opinion of clinicians, and begin with the major types of cancer.

CCO believes that ***standards, guidelines and best practices*** increasingly need to be used ***to promote the quality, safety and efficiency of cancer surgery***. CCO is developing quality standards and guidelines for cancer surgery. The Surgical Oncology Program – working with CCO's internationally renowned Program in Evidence-Based Care – has developed draft standards for thoracic cancer surgery, and practice guidelines for laparoscopic surgery for colon cancer. In addition, CCO is implementing quality surgical practice indicators to monitor whether these and other standards and guidelines are being used in clinical practice. CCO and the Regional Vice Presidents will increasingly be using these standards and guidelines to determine which hospitals should receive additional cases, and where programs need to be developed. CCO is also developing

Communities of Practice (CoP) as a vehicle to promote surgical quality within and across LHINs. Over 1,000 Ontario surgeons involved in cancer care are being engaged to establish professional relationships, collaborate on new initiatives, promote professional learning, and advance the use of best practice standards and quality. The link between quality initiatives and funding needs to be strengthened. It is recommended that the Ministry support CCO's initiatives that promote the quality, safety and efficiency of cancer surgery, and that the Ministry strengthen the link between quality and funding so that cancer surgery funding is closely tied to increasing quality and performance expectations. CCO also endorses, in principle, the peri-operative best practice targets developed by the Wait Time Strategy's Surgical Process Analysis and Improvement Expert Panel. Recognising that hospital boards and management are accountable for these efficiencies within their organisations, and that LHINs are accountable for the network's performance, CCO will examine and promote the recommended peri-operative best practice targets through the Regional Vice-Presidents in each LHIN.

When CCO examined whether the number of cancer surgeries performed impacts on outcomes, it was concluded that the research findings appear to be inconclusive with the exception of highly complex surgeries. CCO will continue to intensify its focus on the quality and safety of cancer surgery by continuing to develop volume standards for each tumour site, set quality performance targets, and monitor quality indicators such as deaths and infection rates. This information will help shed light on the relationship between volume and outcome, and ensure appropriate and safe surgical practices.

Dr. Hudson requested CCO to develop urgency categories (including an emergency priority rating) and maximum wait time targets to help guide the professional decision making of surgeons in Ontario. CCO recommends a ***patient priority rating tool and wait time targets*** for cancer surgery. The scale – measuring the time from the decision to operate to the operation – reflects four priority ratings (maximum target time frames are identified):

- 0: Oncologic emergency, e.g., airway obstruction, bleeding (Immediate).
- I: Patients diagnosed with very aggressive tumours, such as central nervous system cancer (14 days).
- II: All patients with known or suspected invasive cancer that does not meet the criteria of urgency category I or III (28 days).
- III: Patients diagnosed with indolent tumours (84 days).

2. Information to Monitor Performance and Support Quality Improvements

The Cancer Quality Council of Ontario is a major vehicle to monitor performance and support ongoing quality improvements in Ontario's cancer system. Both the Council's first report (2003) and CCO's *Ontario Cancer Plan* (2004) noted that there were few published, well-developed quality indicators for cancer surgery by which to measure access and appropriateness. CCO has since increased its focus on developing information to monitor surgical performance and support quality improvements. For example, the Cancer System Quality Index – which uses 25 indicators to measure and track the quality and consistency of cancer services and areas for improvements –

provides an overview of the quality of cancer services in Ontario. In addition, CCO has developed methodologies to identify true surgical cases, operating room cases, and surgical volume by specialty and hospital.

As part of the Wait Time Strategy, CCO identified surgical indicators to meet short-term requirements for incremental cancer surgery volumes and set the stage for longer-term improvements in the quality and delivery of cancer surgery. Hospitals receiving incremental cancer funding must now participate in processes to develop surgical networks, and complete hospital performance reports as part of their Cancer Surgery Agreements. These reports clearly stipulate quality requirements for cancer surgery programs in Ontario (e.g., tumour boards, synoptic pathology reporting, cancer staging improvements). CCO will monitor hospitals' surgery programs using these performance and quality indicators, and will develop and implement additional quality indicators as part of the Wait Time Strategy. It is recommended that the Ministry support CCO's continuing development of performance and quality indicators for cancer surgery.

3. Human Resources

Cancer surgery is under pressure because of human resource shortages (e.g., anaesthesiology, pathology, nursing), an ageing workforce in some specialties, and a reduction of surgical postgraduate training positions that occurred in Ontario over ten years ago. CCO's *Ontario Cancer Plan* identified the implementation of innovative health human resources as one of its action plans (e.g., advanced practice nurses for specific patient populations and oncology nurse practitioners). CCO acknowledges the important recommendations of the Wait Time Strategy's Surgical Process Analysis and Improvement Expert Panel that will help improve the efficient and effective use of highly skilled cancer surgeons. Although CCO and other Wait Time Strategy expert panels have identified opportunities to improve the efficient and effective use of skilled surgeons, there is a need to train more cancer surgeons to meet the growing demand for this specialty in Ontario. CCO recommends that the Ministry support the expansion of subspecialty training in surgical oncology in Ontario, which includes funding support for post-residency surgical oncology fellowship positions.

4. Technology

Many reports have recommended a standardised approach to evaluating new technologies before they are implemented. In cancer surgery, there is a need to link the implementation of new technologies with evidence-based care. Furthermore, there is a need to introduce new technologies in a controlled fashion so that patient harm is minimised.

5. Funding

The *Ontario Cancer Plan* identified the need to: i) develop and test rate complexity-volume funding methodologies for cancer services that provide adequate and predictable funding for cancer surgery, incorporate volume and complexity considerations, and can

be monitored using available administrative data; and ii) develop alternate funding plans in surgical oncology. CCO's Surgical Oncology Program developed a framework to allocate sub-specialty review funding in surgical oncology to Ontario's academic health science centres. (This funding was known as "repair funding" which was base funding for disciplines, specialties or programs that needed immediate attention.) Although the framework identified quality and performance accountabilities, the Ministry did not incorporate these into the funding. CCO recommends that the Ministry transform the sub-specialty repair funding for surgical oncology into an Alternate Funding Plan (AFP) for surgical oncology. Furthermore, this AFP should link funding to clear quality and performance accountabilities and deliverables.

Currently, surgical advancements are being inhibited by the lack of capital investments and operating funding. CCO recommends that the Ministry provide appropriate infrastructure support for major technological initiatives in surgical oncology (e.g., minimal access surgery, image guidance). This support should be strongly linked to organisational performance standards.

6. The Organisation of Services to Meet Quality Standards and Future Needs

The *Ontario Cancer Plan* identified the development of regional cancer programs as one of CCO's top priorities. CCO has been actively working with its Regional Vice Presidents to develop a regionalised system of high quality cancer care. The introduction of Local Health Integration Networks (LHINs) – which are responsible for monitoring and ensuring access to health services within their networks – means that CCO needs to align and link its regional cancer activities with LHINs. It is recommended that the Ministry and LHINs work together with CCO to ensure that CCO's regional cancer activities are aligned and linked with the LHIN structure, and that a regionalised system of high quality cancer surgery continues to be supported.

SECTION A: INTRODUCTION

1. BACKGROUND

Surgery is a major component of cancer care and is usually needed to determine if a tumour is cancerous or not. Surgery may also be required for staging,[1] and as a definitive treatment to remove a malignant growth. Approximately 80% of patients with cancer undergo a surgical procedure to diagnose, stage or treat cancer. Since surgery is most often the first point of entry into the cancer treatment system, waiting for surgery can impact on the entire patient journey. Cancer is the second leading cause of death in Ontario.[2] For the majority of cancer patients, surgery is the main curative treatment. Of all treatable cancers, surgery achieves about a 50% cure rate, when used on its own or in combination with radiation or systemic therapy.[3]

Cancer surgery is performed by surgical oncologists and other surgeons. All active treatment general hospitals provide some surgical care for cancer patients. Those with more complex or less common cancers may be referred to specialised facilities that have appropriate expertise and support to treat those cancers. Although all cancer surgery occurs in hospitals, an increasing number of procedures are done without an overnight stay. In fact, most diagnostic surgical procedures are done on an out-patient basis.

Surgical waiting times vary by type of cancer.[4] There is a general belief that waiting times for cancer surgery are too long and must be reduced, and there is evidence to suggest that waiting times for cancer surgery are increasing.[5] These waits will likely continue to increase largely as a result of the growing incidence in cancer.

The focus of this report is to present a plan that provides Ontarians with equitable access – regardless of where one lives – to quality cancer surgery in a timely and appropriate manner. The Ministry of Health and Long-Term Care (Ministry) has focused on cancer surgery as part of Ontario's Wait Time Strategy. The Strategy is one of Ontario's top priorities within a broader agenda to transform Ontario's health system. On September 9, 2004, George Smitherman – the Minister of Health and Long-Term Care – established the Health Results Team to lead a number of major healthcare transformation initiatives.[6] Dr. Alan Hudson was appointed as Lead of Access to Services and Wait Times, charged with leading the implementation of the Strategy.

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[1] Staging evaluates the stage of disease, with respect to the extent and spread of the disease.

[2] Hodgson D, Urbach D, Przybysz R, Sullivan T, Rabeneck L. "Cancer Surgery." In: Tu JV, Pinfold SP, McColgan P, Laupacis A (eds) *Access to Health Services in Ontario: ICES Atlas. Toronto: Institute for Clinical Evaluative Sciences*, 2005.

[3] Cancer Care Ontario, *GTA 2014 Cancer Report: A roadmap to improving cancer services and access to patient care*, June 2004.

[4] Cancer Care Ontario, Cancer System Quality Index (www.cancercare.on.ca/qualityindex).

[5] Cancer Care Ontario, *Ontario Cancer Plan 2005-2008: Driving quality, accountability and innovation through Ontario's cancer system*, November 2004.

[6] In addition to the Wait Time Strategy, other initiatives include creating Family Health Teams for primary care, building information systems, developing Local Health Integration Networks (LHINs), and encouraging greater community involvement in planning.

The goal of the Strategy is to achieve a comprehensive, patient-centred care system that monitors and manages wait times, improves how efficiently and effectively care is delivered, and makes wait time information available to the public and providers. The Strategy is designed to improve access to healthcare services by reducing the time that adult Ontarians wait for services in five key areas by December 2006: cancer surgery, selected cardiac surgery procedures, cataract surgery, MRI and CT scans, and total hip and knee joint replacements. The five areas of focus are associated with a high degree of disease and disability, and are the beginning of an ongoing process to improve access to, and reduce wait times for, a broad range of healthcare services.

The Ministry selected cancer surgery for a number of reasons:

- In various opinion polls, the public and healthcare providers in Ontario have expressed concerns about access to cancer surgery.
- The demand for cancer surgery is growing. More than 54,000 Ontarians were diagnosed with cancer in 2004 with the annual number of new cancer cases expected to increase 26% to 68,000 by 2010.[7] About 90% of this increase will be due to population growth and aging, with the remaining 10% due to changing cancer risks.[8] The increase in cancer incidence (number of new cases) will impact significantly on future demands for cancer surgery.
- At the 2004 Annual Conference of the Federal-Provincial-Territorial Ministers of Health, the First Ministers agreed to achieve meaningful reductions in wait times in at least five key areas by March 31, 2007: cancer, cardiac, joint replacements, sight restoration, and diagnostic imaging.[9] Ontario set December 2006 as its target date for results, and specifically earmarked cancer surgery as the mode of treatment on which the province would focus.

An in-depth analysis of the length of time that Ontarians wait for the four most frequent cancer surgeries was recently released as part of the Wait Time Strategy (i.e., colon resection, mastectomy, prostatectomy, hysterectomy). In April 2005, the Minister of Health and Long-Term Care received, *Access to Health Services in Ontario*, an Institute for Clinical Evaluative Sciences' Atlas commissioned by the Wait Time Strategy.[10] Using various data sources, the report presents an objective overview of wait times for the province and for the 14 Local Health Integration Networks (LHINs) for these four cancers (see Chapter 5, *The Profile of Cancer Surgery Activity in Ontario*).[11] The data has already been used to identify the LHINs that are facing wait time challenges and to inform the allocation of additional cases. Beginning in September 2005, wait times by hospital will be reported publicly on the Wait Times website.[12] The ability of hospitals

[7] Hodgson D et al., *Ibid*., 2005.
[8] Cancer Care Ontario, *Ontario Cancer Plan 2005-2008, Ibid.*
[9] *National Waiting Times Reduction Strategy*. 2004 Annual Conference of Federal-Provincial-Territorial Ministers of Health.
[10] Tu JV. Pinfold SP, McColgan P, Laupacis A, editors. *Access to Health Services in Ontario: ICES Atlas*. Toronto: Institute for Clinical Evaluative Sciences; 2005 (www.ices.on.ca).
[11] See Appendix 1 for a map of the Local Health Integration Networks.
[12] www.health.gov.on.ca/transformation/wait_times.

to meet the growing need for cancer surgery is being impacted by increasing demands from many other priorities on a hospital's resources.

2. METHODS USED TO DEVELOP THIS REPORT

Dr. Alan Hudson asked Cancer Care Ontario (CCO) for its advice on allocating additional surgical volumes and developing an accessible, high quality cancer surgery system. CCO's vision – working together to create the best cancer system in the world – is supported by the organisation's mission which is to " improve the performance of the cancer sytsem by driving quality, accountability and innovation in all cancer-related services." As a planning and research organisation, CCO provides expert advice to the Ontario government on all aspects of provincial cancer care, provides information to health care providers and decision-makers, and motivates better cancer system performance. CCO is well positioned to identify criteria for additional surgical volumes and the hospitals that should receive incremental funding, and advise government on ensuring equitable access to safe cancer surgery in a timely and appropriate manner. Indeed, over the past three years, CCO has led and participated in a number of significant achievements to improve Ontario's cancer system including:[13]

- Integrating 11 regional cancer centres with their respective host hospitals and shifting the management of cancer services to the local hospital.
- Developing a formal affiliation agreement with Princess Margaret Hospital and thus unifying cancer services.
- Supporting the development and ongoing activities of the Cancer Quality Council of Ontario which is mandated to publicly report on the quality of cancer services.
- Partnering with the Cancer Quality Council of Ontario on a number of important initiatives including: *Strengthening the Quality of Cancer Services in Ontario,* the *Four-Point Strategy to Reduce Waiting Times in Ontario,* and the *Cancer System Quality Index.*
- Expanding the Program in Evidence-based Care and creating a Clinical Council comprised of clinical program leads.
- Developing and implementing a cancer information management strategy.
- Developing a portfolio of provincial clinical programs (surgery, radiation therapy, systemic therapy, laboratory medicine, palliative care).
- Developing a number of major reports including the *GTA 2014 Cancer Report*; *Cancer 2020 Targeting Cancer: An action plan for cancer prevention and detection*; and the *Ontario Cancer Plan 2005-2008*.

In addition to these improvement initiatives, CCO – in partnership with the Cancer Quality Council of Ontario – identified four major strategies to improve access and reduce waiting times for quality cancer services in Ontario.[14] These include:

[13] Cancer Care Ontario, *Ontario Cancer Plan 2005-2008, Ibid.*
[14] Schwartz F, Evans W, Sullivan T, Angus H. *A Four-Point Strategy to Reduce Waiting Times in Ontario: Gaining Access to Appropriate Cancer Services.* Cancer Quality Council of Ontario in partnership with Cancer Care Ontario, Spring 2004.

- Reducing the demand for services by lowering the risk of developing cancer and promoting early detection;
- Increasing the supply of cancer resources in Ontario;
- Coordinating access to cancer services; and
- Increasing the efficient use of existing cancer resources.

In the development of this report, CCO reviewed these and other documents and initiatives, and held discussions with external and internal stakeholders and a provincial group of cancer surgeons. The focus of these discussions was to identify solutions to support improved access to high quality cancer surgery in Ontario.

3. OVERVIEW OF THE REPORT

Section B begins with a profile of cancer surgery activity in Ontario including a description of cancer surgery and a profile of activity in Ontario (Chapters 4-5).

Section C presents CCO's deliberations and recommendations on cancer surgery including:

- The definition of wait for cancer surgery within the Wait Time Strategy (Chapter 6);
- An assessment of the Ministry's short-term solutions to reduce waits for cancer surgery (Chapter 7); and
- The elements of a provincial plan to provide equitable access to quality cancer surgery in a timely and appropriate manner (Chapter 8). These elements include best practice targets and approaches to support standardisation, information to monitor performance and support quality improvements, human resources, technology, funding, and the organisation of services to meet quality standards and future needs.

Section D presents the consolidated list of recommendations.

SECTION B: A PROFILE OF CANCER SURGERY IN ONTARIO

4. CANCER SURGERY

Surgery for cancer is used as a diagnostic and staging procedure, and as a definitive treatment to remove a malignant growth. Surgical practice has changed substantially due to technological advances and increased knowledge. In some cases, these advances may reduce the cost of care but, more often than not, they increase the need for resources (at least in the short-term). A wide range of innovations have and will continue to impact on cancer surgery activity in the future. These include:[15]

- Further development of minimally-invasive surgical techniques, robotics, and image-guided surgery, many of which have been associated with increased surgical costs.
- Further development of combined cancer therapies (i.e., surgery, radiotherapy and systemic therapy).
- Alternate methods of locally destroying tumours – such as radiofrequency and ultrasound – rather than removing them surgically. These techniques may decrease costs if they can replace major surgery with similar or better outcomes.
- Improved techniques of radiotherapy (e.g., focused radiation, altered fractionation techniques, brachytherapy).
- Improved early detection of cancer through better screening and new tumour markers.
- Improved prediction of the occurrence of cancer using genetic markers, which creates the possibility of surgery in very high risk patients as a precautionary measure.

5. THE PROFILE OF CANCER SURGERY ACTIVITY IN ONTARIO

The incidence of cancer in Ontario is projected to increase 34% from 2005-2014 (Table 1). The projected increase ranges from a low of 21% in the Toronto Central and North West LHINs to a high of 49% in the North Simcoe Muskoka LHIN (see Appendix 1 for a map of the LHINs).

Cancer surgery volumes are projected to increase by 15% over the next three years.[16] Given that 80% of patients with cancer undergo a surgical procedure, the substantial increase in the incidence of cancer suggests that the demand for cancer surgery will rise significantly over the next ten years.

[15] Cancer Care Ontario, *GTA 2014 Cancer Report*, June 2004.
[16] Estimates based on CCO's new methodology as reported in Cancer Care Ontario, *Ontario Cancer Plan 2005-2008, Ibid.*

Table 1: Projected Incidence of Cancer by Local Health Integration Network, 2005, 2010, 2014 (Calendar Year)*

Local Health Integration Network	2005	2010	2014	% Change 2005-2014
01 Erie St. Clair	3,242	3,726	4,155	28%
02 South West	4,859	5,595	6,315	30%
03 Waterloo Wellington	3,130	3,749	4,312	38%
04 Hamilton Niagara Haldimand Brant	7,197	8,285	9,295	29%
05 Central West	2,938	3,642	4,277	46%
06 Mississauga Halton	4,340	5,421	6,364	47%
07 Toronto Central	5,551	6,151	6,712	21%
08 Central	7,008	8,610	10,070	44%
09 Central East	7,211	8,468	9,654	34%
10 South East	2,660	3,068	3,471	31%
11 Champlain	5,701	6,743	7,682	35%
12 North Simcoe Muskoka	2,174	2,708	3,239	49%
13 North East	3,173	3,573	3,921	24%
14 North West	1,183	1,308	1,435	21%
Total	**60,367**	**71,047**	**80,902**	**34.0%**

*LHIN projections are based on a Ministry of Health and Long-Term Care LHIN file mapped with Ministry of Finance population projections. Historical incidence counts are taken from the Ontario Cancer Registry.

A recent review of access to cancer surgery in Ontario used administrative health data to examine the numbers and rates of cancer surgery, as well as wait times in Ontario (defined as the interval between the date of consultation with a surgeon and the date of surgery).[17] Four cancer-related procedures with the highest frequency in the OHIP database were examined:

- Large bowel resection (surgical removal of the diseased portion of the large intestine/colon);
- Mastectomy (surgical removal of the breast);
- Radical prostatectomy (surgical removal of the entire prostate gland and some surrounding tissue); and
- Hysterectomy (surgical removal of the uterus).

Rates are presented for patients aged 40 years and older since over 97% of the procedures studied were performed for this population. Among the four procedures studied, the ***number of surgeries*** performed in Ontario increased by almost 50% from 1993/94 to 2003/04. The largest increase by far occurred with radical prostatectomy (171%), followed by large bowel resections (43%), mastectomy (22%) and hysterectomy (21%). The study authors note that the large increase in radical prostatectomies was probably influenced by the increased detection of prostate cancer using prostate specific antigen screening (PSA).

[17] Hodgson D et al., *Ibid*, 2005.

There were substantial differences in the ***rates of the four cancer surgeries*** by LHIN. In 2003/04:

- Large bowel resection ranged from a high of 149 per 100,000 population in the North East LHIN to a low of 97 per 100,000 in the Central West LHIN.
- Mastectomy ranged from a high of 67 per 100,000 population in the North West LHIN to a low of 30 per 100,000 in the Mississauga Oakville LHIN.
- Radical prostatectomy ranged from a high of 142 per 100,000 population in the South West LHIN to a low of 69 per 100,000 in Erie St. Clair.
- Hysterectomy ranged from a high of 81 per 100,000 population in the South East LHIN to a low of 44 per 100,000 in the North West LHIN.

No LHIN had cancer surgery rates that were consistently very high or very low for all procedures. The authors note that it is impossible to infer whether these rate variations reflect inappropriate under- or over-utilisation among LHINs.

With regard to ***wait times***, the authors note that 27%-54% of large bowel resection, mastectomy and hysterectomy surgeries occurred within four weeks following surgical consultation; the majority of these three procedures (84–94%) occurred within 12 weeks.

In 2003/04, the median intervals between surgical consultation and surgery were 26 days for large bowel resection, 29 days for mastectomy, 46 days for hysterectomy, and 87 days for radical prostatectomy. There were also substantial variation between LHINs in median wait times for different procedures:

- Median waits for large bowel resection ranged from a high of 34 days in the North West LHIN to a low of 22 in the Toronto Central LHIN, a difference of 12 days.
- Median waits for mastectomy ranged from a high of 41 days in the Central LHIN to a low of 19 days in the Erie St. Clair LHIN, a difference of 22 days.
- Median waits for radical prostatectomy ranged from a high of 118 days in the Champlain LHIN to a low of 72 in the Erie St. Clair LHIN, a difference of 46 days.
- Median waits for hysterectomy ranged from a high of 60 days in the Central LHIN to a low of 22 days in the North West LHIN, a difference of 38 days.

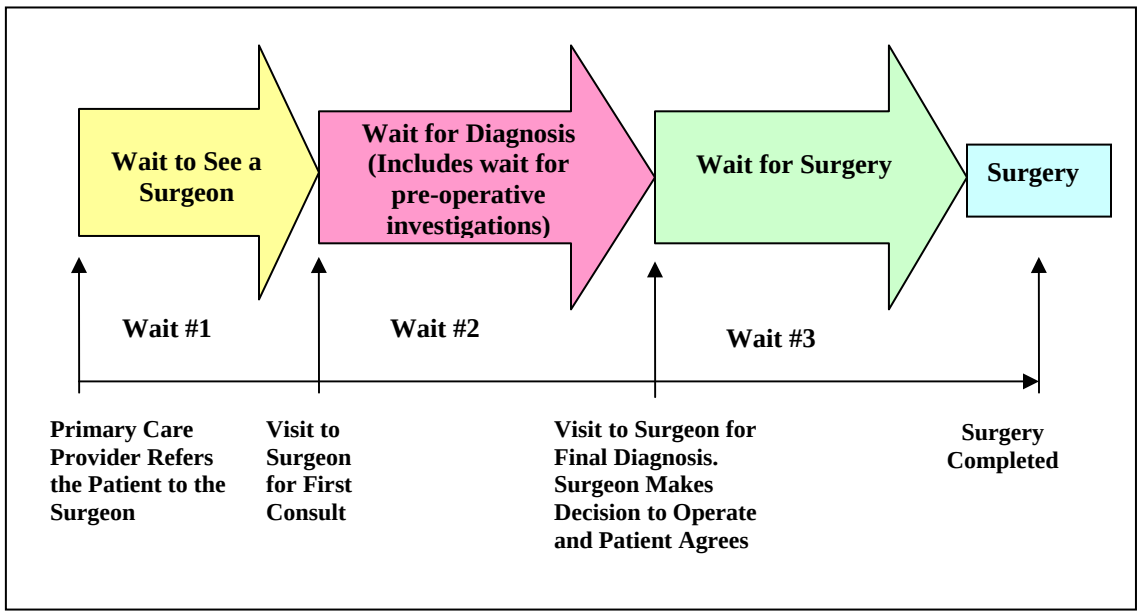
The authors note that some of the difference between type of surgery and median wait time likely reflects variation in the urgency of surgery and the appropriateness of non-surgical management for different cancer types. For example, the long wait between surgical consultation and surgery for radical prostatectomy is likely due to several factors. A large proportion of patients were probably referred to a urologist after the finding of an elevated PSA level in a blood test, but without biopsy-proven cancer. As a result, for many patients the wait interval may have included the wait for a biopsy in addition to the subsequent wait for radical prostatectomy. In many cases, it may have been medically appropriate for “watchful waiting” to observe the rate of PSA rise to determine the clinical aggressiveness of the tumour before deciding on surgery. In addition, patients eligible for radical prostatectomy may also have considered radiation therapy instead.

SECTION C: CANCER CARE ONTARIO'S DELIBERATIONS AND RECOMMENDATIONS

6. THE DEFINITION OF WAIT FOR CANCER SURGERY

The definition of "wait time" for cancer surgery includes a series of waits such as:

- Wait #1: From the day the primary care provider refers the patient to the surgeon, to the day the patient sees the surgeon for a consultation.
- Wait #2: From the day of the first surgical consultation, to the day the surgeon makes the decision to operate and the patient agrees to have surgery. This wait includes completing the required pre-operative investigations (e.g., diagnostic and pathology tests) that result in surgery as the recommended treatment.
- Wait #3: From the day the surgeon makes the decision to operate and the patient agrees with the decision, to the day the cancer surgery is performed.



There are a broad range of factors within each of these wait times that can cause delays:

- Delays in Wait #1 can be due to a shortage of cancer surgeons, a referral to a surgeon with a long waiting list, or delays obtaining investigations that need to be completed before the first consultation.
- Delays in Wait #2 can be due to waiting for certain services to be performed such as a biopsy, a diagnostic imaging test, other multidisciplinary consultations or a pathology review. Managing the complications of the cancer or other diseases can also lead to delays.

- Delays in Wait #3 can be due to such factors as a shortage of surgeons, anaesthesiologists or other operating room staff to perform the procedure, insufficient operating time, a shortage of ward or ICU beds or other physician resources, and poor coordination and use of operating room and other treatment resources.

The initial focus of Ontario's Wait Time Strategy is from the date the decision is made to operate, to the date the operation if performed. The Ministry will address other wait times and other areas after December 2006, building on the systems and approaches being developed now and allocating appropriate resources to support expansion.

For the purposes of the Wait Time Strategy – which is focused on surgical wait times – Wait #3 depicted in the diagram above is the focus of discussion.

7. ASSESSMENT OF THE MINISTRY'S SHORT-TERM SOLUTIONS TO REDUCE WAITS FOR CANCER SURGERY

In Phase I of the Wait Time Strategy (September 2004-March 31, 2005), the Minister allocated $35 million to Ontario hospitals to increase the number of procedures in the five selected areas by March 31, 2005. The major purpose of this investment was to begin immediately to reduce the backlog of patients waiting for these services.

In November 2004, $10 million was provided to 25 hospitals in Ontario to perform 1,700 additional cancer surgeries by March 31, 2005. CCO advised the Ministry on appropriate funding criteria and the allocations for each hospital. The criteria for receiving additional case funding included performing a critical volume of cancer surgeries, demonstrating a commitment to the wait times initiative, and ensuring a regional distribution of additional cases across the province.

The Minister allocated additional funds for fiscal 2005/06 as part of Phase II of the Wait Time Strategy. In May 2005, $27 million was provided to 37 hospitals to perform 4,800 cancer surgeries by March 31, 2006. This funding supported the cancer surgeries allocated in Phase I plus 2,900 new surgical cases in 2005/06. CCO played a leadership role advising the Ministry on additional funding criteria, developing a methodology to allocate new funds, identifying hospitals to receive new cases in 2005/06, identifying hospital-specific volume targets, and suggesting the distribution of additional volumes by specialty and intensity levels for each hospital. (Hospitals were free to provide the surgeries that best met their patient needs within the specified funding envelope.) The Regional Vice-Presidents of Cancer Services (RVP) actively worked with hospitals in their regions to identify difficulties completing cases and develop solutions to meet the agreed-upon targets.

It was challenging to develop a methodology to allocate funds since cancer surgery represents over a hundred different diseases, each with different complexities. CCO's methodology identified a "cancer surgery case" as well as the complexity of cases. CCO

used the following criteria to distribute additional cancer surgery cases to hospitals in 2005/06:

- The hospital had to meet a base threshold number of cases to demonstrate a critical volume of activity.
- There was a regional (LHIN) and subspecialty distribution of cases across the province.
- The hospital had to demonstrate the capacity to perform the additional surgeries and, if previously funded, had to have demonstrated acceptable performance.
- Where volume-outcome relationships are known, high complexity cases were distributed to high-volume centres only, to support high quality surgical outcomes.

Consistent with the Wait Time Strategy, not only were the additional funds used to meet short-term requirements for additional cancer surgeries, funding was also used to set the stage for longer-term improvements. As a condition of funding, hospitals were required to sign Cancer Surgery Agreements with CCO that linked additional cancer surgery volumes with quality improvement initiatives, clear accountabilities for performance and the development of regional cancer programs. The agreements outlined the following performance requirements:

- Volume requirements: performing the allocated number of surgeries, and working with the Regional Vice-President and medical staff from neighbouring hospitals to ensure that volumes are completed and that patients from the surrounding area have appropriate access to needed surgery.
- Quality requirements: participating in CCO's provincial Surgical Oncology Program, specifically developing and implementing quality guidelines and standards, transferring knowledge, and implementing other best practices over a reasonable period of time (e.g., cancer staging, synoptic pathology reporting, surgical oncology networks).
- Reporting requirements: reporting specific performance data on all cancer surgery volumes, cancer surgery waiting times for each surgical specialty, and other key quality indicators. (See Chapter 8.2, *Information to Monitor Performance and Support Quality Improvement* for the performance indicators.)
- Regional Cancer Program requirement: working with the Regional Vice-President to develop a regional cancer program as described in the *Ontario Cancer Plan*.

8. A Provincial Plan to Provide Equitable Access to Quality Cancer Surgery in a Timely and Appropriate Manner

Initiatives in a number of areas are needed if Ontario is to provide equitable access to quality cancer surgery in a timely and appropriate manner. The cancer surgery system can meet the growing demand for service by expanding capacity (e.g., operating rooms, human resources), doing things differently (e.g., more efficiently and innovatively), and doing things right (e.g., using evidence-based guidelines and standards, monitoring and

improving performance).[18] The following improvement areas are addressed in this section:

- Best Practice Targets and Approaches to Support Standardisation
- Information to Monitor Performance and Support Quality Improvements
- Human Resources
- Technology
- Funding
- The Organisation of Services to Meet Quality Standards and Future Needs

8.1 Best Practice Targets and Approaches to Support Standardisation

There is considerable variation in surgical practice models and processes in Ontario.[19] These include solo practices, in which cancer may be a small part of a surgeon's practice, a variety of loose collaborative practice arrangements, and highly structured and cancer-focused specialty groups. Approaches to treatment also vary, as does the extent to which multidisciplinary consultations and care teams are used to provide care. The consequences of this variation is that patients, who are referred for a surgical opinion and treatment, may have widely differing experiences accessing surgical care, the appropriate level of expertise, and the appropriate non-surgical component of their care.

This section addresses best practice targets and approaches to support standardisation in cancer surgery through:

- Population-based Planning Targets
- Quality, Safety and Efficiency Through Standards, Guidelines and Best Practices
- Patient Priority Rating Tools and Wait Time Targets

POPULATION-BASED PLANNING TARGETS

Population-based planning targets for cancer surgery identify the number of cancer surgeries that would be expected in a region, based on the characteristics of the population. Well-developed targets can highlight surgical variations that need to be explored, identify potential inequities in access between LHINs, and help focus efforts on reducing inappropriate variations in service. For example, if a LHIN's actual rate of cancer surgery is significantly different than the target rate, it may point to the lack of surgical services in the area, to a higher incidence of cancer, or to a greater use of surgery rather than alternative treatments.

Although it will be challenging to develop population-based planning targets by age and cancer incidence for cancer surgery, it would be prudent to begin with the major types of cancer. The development of targets will take into account relevant research, the experience of other jurisdictions, and the expert opinion of clinicians.

[18] Cancer Care Ontario, *Ontario Cancer Plan 2005-2008, Ibid.*
[19] Cancer Care Ontario, *GTA 2014 Report, Ibid*

Cancer Care Ontario recommends that:

R1 The Ministry of Health and Long-Term Care support the development of population-based planning targets for the number of cancer surgeries per 100,000 population in Ontario, adjusted by age and cancer incidence. This work should take into account relevant research, the experience of other jurisdictions and the expert opinion of clinicians.

QUALITY, SAFETY AND EFFICIENCY THROUGH STANDARDS, GUIDELINES AND BEST PRACTICES

Standards, guidelines and best practices help promote the quality, safety and efficiency of cancer surgery. CCO is engaged in a number of initiatives that have helped improve decision making in cancer care.

One key initiative is the development of quality standards and guidelines using existing evidence, supplemented by expert opinion. When used appropriately in clinical practice, standards and guidelines can minimise inappropriate practice variations, support quality improvements, and optimise the use of scarce resources. CCO's Program in Evidence-Based Care (PEBC) has an international reputation as a valid and reliable source of evidence-based guidelines and knowledge. The PEBC uses multidisciplinary provincial disease site groups to develop guidelines for a particular disease site. To date, these clinical practice guidelines have mainly focused on anti-cancer drugs and radiation therapy.

CCO's Surgical Oncology Program – working with PEBC – is focusing on cancer surgery, and has recently developed draft standards for thoracic cancer surgery, and practice guidelines for laparoscopic surgery for colon cancer. These documents include such things as practice volumes, training requirements for surgeons, and physical facility requirements. In addition, CCO has developed and is implementing quality surgical practice indicators to monitor whether these and other standards and guidelines are being used in clinical practice. CCO and the Regional Vice Presidents (RVPs) will increasingly use these standards and guidelines to determine which hospitals should receive additional cases, and where programs need to be developed. The RVPs will also be accountable for ensuring that hospitals fulfil their contractual obligations.

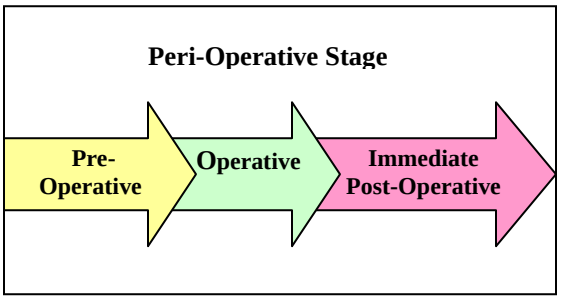
A second CCO initiative that promotes high quality surgical cancer care is the development of Communities of Practice (CoP). The literature defines CoPs as groups of people who share a common concern, set of problems or a passion for a topic, and who deepen their knowledge and expertise in an area by interacting on an ongoing basis.[20] The Surgical Oncology Program's CoPs initiative is working to engage over 1,000 Ontario surgeons involved in cancer care to establish professional relationships within and across LHINs, collaborate on new initiatives, promote professional learning, and

[20] Wenger E, McDermott R, Snyder WM. *Cultivating Communities of Practice*. Boston: Harvard Business School Press, 2002.

advance the use of best practice standards and quality. Ultimately, the goal of CoPs is to improve the quality of cancer surgery and advance regional cancer surgery networks. For example, within each LHIN, high volume breast, prostate and colorectal cancer surgery will likely be performed in most hospitals. LHIN-based CoPs will link these surgeons and promote the use of evidence-based standards of care. For low volume, high acuity cancer surgeries, such as lung and esophageal cancers, CoPs will link surgeons across LHINs to facilitate consultation, appropriate referral and follow up, and to integrate all phases of care.

In addition to the two CCO initiatives noted above, the use of surgical best practices will help improve quality, safety and efficiency. For example, the recent report of the Wait Time Strategy's Surgical Process Analysis and Improvement Expert Panel identified surgical efficiencies that can be gained throughout the peri-operative process:[21]

- Pre-operative: diagnostics, routine testing, patient education, preparation for surgery, preparation for discharge from the operating room and hospital.
- Operative: the surgical day.
- Immediate post-operative: recovery room, post-anesthetic care unit (PACU).



Report of the Surgical Process Analysis and Improvement Expert Panel (Valerie Zellermeyer, Chair). Prepared for the Wait Time Strategy, June 2005.

Potential peri-operative efficiencies that should be considered for cancer surgery include:

- Establish surgical benchmark targets such as the average time it takes to perform a surgery and first case start-time targets. The Surgical Process Analysis and Improvement Expert Panel noted that the Expert Panels established for the Wait Time Strategy should develop benchmark targets for their particular areas.
- Standardise peri-operative best practice targets as part of the hospital's operating plan process. The Surgical Process Analysis and Improvement Expert Panel identified 11 peri-operative best practice targets (see Appendix 2 for a summary of these targets).
- Standardise supply chain processes that support the peri-operative stage. The supply chain refers to organised and effective processes that manage how products are selected and purchased. The Surgical Process Analysis and Improvement Expert Panel identified eight best practice supply chain targets (see Appendix 2 for a summary of these targets).
- Promote the development and use of care pathways for cancer surgery.
- Help hospitals and surgical teams increase their effectiveness and efficiencies by publicising best practice hospitals.

[21] *Report of the Surgical Process Analysis and Improvement Expert Panel* (Valerie Zellermeyer, Chair). Prepared for the Wait Time Strategy, June 2005.

CCO believes that standards, guidelines and best practices increasingly need to be used to promote the quality, safety and efficiency of cancer surgery. The ongoing development of surgical standards and guidelines through CCO's Surgical Oncology Program and the Program in Evidence-Based Care, and the use of Communities of Practice as a vehicle to promote surgical quality within and across LHINs will help improve access to quality cancer surgery. The link between these quality initiatives and funding needs to be strengthened such that surgical funding is closely tied to increasing quality and performance expectations.

Cancer Care Ontario recommends that:

R2 The Ministry of Health and Long-Term Care support Cancer Care Ontario's (CCO) initiatives that promote the quality, safety and efficiency of cancer surgery. These include the development of surgical standards and guidelines through CCO's Surgical Oncology Program and the Program in Evidence-Based Care, and the implementation of Communities of Practice within and across Local Health Integration Networks.

It is further recommended that:

R3 The Ministry of Health and Long-Term Care strengthen the link between quality and funding so that cancer surgery funding is closely tied to increasing quality and performance expectations.

CCO endorses, in principle, the peri-operative best practice targets developed by the Surgical Process Analysis and Improvement Expert Panel. It is recognised that hospital boards and management are accountable for these efficiencies within their organisations, and that LHINs are accountable for the network's performance. CCO will examine the recommended peri-operative best practice targets from the perspective of cancer surgery and promote these best practices through the Regional Vice-Presidents in each LHIN.

A final issue that has been examined by a number of other expert panels is whether the number of surgeries performed is related to outcomes. Although there is a significant body of literature in this area, the findings appear to be inconclusive with the exception of highly complex surgeries. For this reason, when CCO allocated highly complex cancer surgery cases as part of the Wait Time Strategy, these were distributed to high-volume centres. Furthermore, in its work on cancer services in the Greater Toronto Area, CCO concluded that the distribution of cancer surgery across hospitals is not entirely appropriate.[22] The report noted that low volume, highly complex surgeries are best performed in one or a few hospitals that have the necessary specialised staff and resources.

CCO will continue to intensify its focus on the quality and safety of cancer surgery. It is in the process of developing volume standards for each tumour site, setting quality performance targets, and monitoring quality indicators such as deaths and infection rates.

[22] Cancer Care Ontario, *GTA 2014 Cancer Report*, 2004.

This information will help shed light on the relationship between volume and outcome, and ensure appropriate and safe surgical practices.

PATIENT PRIORITY RATING TOOLS AND WAIT TIME TARGETS

One of the key goals of the Wait Time Strategy is to ensure that patients with more urgent conditions are treated before patients with less urgent conditions, and that all patients will be treated within a reasonable and acceptable timeframe. Dr. Hudson requested CCO to develop urgency categories and target maximum wait times to help guide the professional decision making of surgeons in Ontario. It was recognised that the surgeon will determine the priority of the patient, in consultation with the patient, after carefully considering individual clinical presentation, and patient values and preferences.

CCO's Surgical Access to Care and Wait Times Committee worked with the Program in Evidence-based Care and a panel of experts to develop prioritisation tools and benchmarks for cancer surgery in Ontario. The Committee:

- Conducted a systematic review of published literature to examine the impact of diagnostic and/or surgical delay on patient outcomes and to find published reports defining acceptable or excessive wait times;
- Reviewed selected work on surgical oncology wait time targets from other jurisdictions; and
- Developed consensus recommendations and a draft report that were then reviewed by a panel of experts made up of 55 physicians and cancer care administrators. The recommendations and report were then revised.

Cancer presents a challenge for developing a patient priority rating tool and wait time targets since it is a number of diseases rather than just one. Hodgson et al. note that wait times vary significantly depending on the type of cancer.[23] This is likely due to variations in the number of tests needed to evaluate newly diagnosed patients, the use of other cancer treatments, and the varying clinical urgency of operating on different tumour types. The authors note that studies examining whether delays in cancer surgery are associated with reduced cure rates have produced conflicting results. Some studies have found worse outcomes for patients with longer delays, whereas others have found worse outcomes associated with shorter waits. (In this instance, surgeons may be operating on patients with more aggressive tumours sooner.) The authors further note that there is no scientific evidence to support recommendations about the maximum acceptable wait time for cancer surgery since the prognosis of cancer depends on stage and numerous other factors.

There is some indirect evidence that surgeons prioritise cancer operations to reduce wait times for patients with more aggressive cancers.[24] However, there are no widely accepted urgency rating scales that distinguish among different types of cancer surgery.

[23] Hodgson D et al., *Ibid*, 2005.
[24] Hodgson D et al., *Ibid*, 2005.

The Saskatchewan Surgical Care Network prioritises all cancer surgery operations as "urgent".[25] A major goal of the Network is to perform 95% of cancer and suspected cancer surgeries within three weeks of the decision to operate.

Various standards have been proposed for a reasonable interval of time between consultation with a surgeon and the date of surgery:

- A Canadian Society for Surgical Oncology position statement recommends that treatment, including surgery, be initiated within two weeks of completion of any necessary pre-operative tests.[26]
- The National Health Service of the UK Department of Health proposes a target wait of one month from diagnosis to treatment for all cancers by 2005. (These guidelines represent the consensus of stakeholders to keep cancer treatment wait times as low as reasonably achievable, recognising that definitive scientific evidence supporting a single cancer surgery benchmark is not currently available.)[27]

Much of the evidence reviewed by the Committee suggests that a delay in diagnosis affects patient outcomes more than a delay between diagnosis and surgery. In most studies, delays between diagnosis and surgery were relatively short compared with the delays occurring prior to a cancer diagnosis. In addition, other factors such as the stage of disease, aggressiveness of the tumour, and co-morbidities appear to have a stronger impact on survival than the delay from the decision to treat to surgery. Nevertheless, among reports that presented target wait times, the Committee found that:

- The shortest recommended wait time was 14 days.
- The more common recommended target for maximum waiting time from the date of decision-to-treat to surgical treatment was one to two months.
- All studies recommended a target waiting time for surgical treatment of less than three months from the date of diagnosis.

The Committee recommended that:

- Wait times for surgery for known or suspected invasive cancer be evaluated using three urgency categories.
- All cancer surgeries be classified as category 2, unless otherwise indicated.
- There be maximum target times for each category with the aim that 80% of patients in each category will be treated within the targeted time frame. (It is expected that the remaining 20% of patients may experience delays due to such things as co-morbidities and voluntarily delaying the surgery for personal reasons).

The Committee's target time frames do not apply to:

[25] Saskatchewan Surgical Care Network, 2005. jttp://www.sasksurgery.ca/index.html.
[26] Canadian Society for Surgical Oncology position statement. http://www.cos.ca/csso/policy.html.
[27] Cancer wait times. Guidance on making and tracking progress on cancer wait times. UK Department of Health, http://wwwldh.gov.uk/assetRoot/04/01/232/90/04012290.pdf.

- Surgeries to remove known or suspected cancers that have immediately life-threatening conditions (e.g., airway obstruction, haemorrhage, neurological compromise) which are expected to be treated on an emergent basis.
- Surgeries to remove benign tumours, even if there are major or urgent health issues.
- Surgeries to remove non-invasive or pre-malignant tumours.
- Procedures for reconstruction or rehabilitation.
  Palliative operations or operations for metastatic disease.
- Surgeries that are delayed because the surgeon and the patient have agreed on a "watchful waiting" strategy for treatment.

In discussions with Dr. Hudson about the recommended priority rating scale, CCO was requested to include an emergency priority rating. Table 2 presents CCO's recommended priority rating scale and the maximum target time frame for cancer surgery in Ontario.

Table 2: Recommended Priority Rating Scale and Maximum Target Time Frame for Cancer Surgery in Ontario

Priority Rating	Clinical Conditions	Target Time Frame (Maximum)	
		Consultation, to Decision to Operate*	**Decision to Operate, to the Operation****
0	Oncologic Emergency (e.g., airway obstruction, bleeding).	Immediate	**Immediate**
I	Patients diagnosed with very aggressive tumours, such as central nervous system cancer.	14 days	**14 days**
II	All patients with known or suspected invasive cancer that does not meet the criteria of urgency category I or III.	14 days	**28 days**
III	Patients diagnosed with indolent tumours.	14 days	**84 days**

*From the date of the patient's first visit to the operating surgeon for this specific problem until the decision to treat date. The decision to treat date is the date on which the surgeon makes the decision to operate and that decision is agreed to by the patient. By this date, a sufficient assessment will have been completed to reasonably assume that the procedure will go ahead, and an operating room booking is requested. This data is distinct from, and may precede, the date on which all pre-operative investigations are complete.

**From the decision to treat date until the date of the operation.

Cancer Care Ontario recommends that:

R4 A priority rating scale with maximum target time frames be adopted for cancer surgery in Ontario. The rating scale – measuring the time from the decision to operate to the operation – should reflect four priority ratings: 0 (oncologic emergency, e.g., airway obstruction, bleeding); I (patients diagnosed with very aggressive tumours, such as central nervous system cancer); II (all patients with known or suspected invasive cancer that does not meet the criteria of urgency category I or III); and III (patients diagnosed with indolent tumours).

8.2 Information to Monitor Performance and Support Quality Improvements

The Cancer Quality Council of Ontario is a major vehicle to monitor performance and support ongoing quality improvements in Ontario's cancer system. Established by the Minister of Health and Long-Term Care in October 2002, the Council monitors and assesses cancer system performance, drives improvements and publicly reports on the quality of cancer services in Ontario. In October 2003, the Council released its first report on the state of the province's cancer programs and services.[28] The authors of the chapter on surgical oncology noted that there were few published, well-developed quality indicators for cancer surgery by which to measure access and appropriateness.[29] The *Ontario Cancer Plan* – released in November 2004 – reiterated the same concerns. When it assessed the completeness of cancer information in Ontario in 2003, the surgical information "report card" ratings were: 100% for incidence of surgery, 0% for staging of surgery, 0% for wait times, and 95% for treated cases.

CCO has increased its focus on developing information to monitor surgical performance and support quality improvements. For example, in early 2005, CCO – in partnership with the Cancer Quality Council of Ontario – developed the Cancer System Quality Index to provide an overview of the quality of cancer services in Ontario. The index focuses on five goals that improve the quality of cancer care: i) improved access to services; ii) better outcomes; iii) use of evidence when treating cancer; iv) greater efficiency; and v) improved measurement. The index uses 25 indicators to measure and track the quality and consistency of cancer services, and identify where cancer service providers and managers can improve. A number of these indicators focus on surgical waits. Yet another example is the development of methodologies that use cancer and surgery-related procedure flags to identify true surgical cases, operating room cases, and surgical volume by specialty and hospital. CCO used these methodologies in 2004 to assess the volume and flow of cancer surgery in all hospitals in the Greater Toronto Area.

The Wait Time Strategy requested CCO to identify surgical indicators to meet short-term requirements for incremental cancer surgery volumes and set the stage for longer-term improvements in the quality and delivery of cancer surgery. As of this fiscal year, hospitals receiving incremental cancer funding must participate in processes to develop surgical networks, and complete hospital performance reports as part of their Cancer Surgery Agreements. These reports clearly stipulate quality requirements for cancer surgery programs in Ontario (Table 3).

[28] Sullivan T, Evans W, Angus H, Hudson A (eds.), *Strengthening the Quality of Cancer Services in Ontario*. Ottawa: CHA Press; 2003.
[29] Gagliardi A, Bell R, Stern H, "Surgical Oncology: A New Frontier for Quality" In Sullivan T, *Ibid*.

Table 3: Performance and Quality Indicators in the Cancer Surgery Agreements

Performance Area	Indicators
Incremental Cancer Surgery Volumes	• Number of cancer surgery volumes (all volumes including cases funded through the hospital's globe and through incremental case funding). • Cancer surgeries by disease site and intensity level.
Wait Time Performance	• Analysis of the hospital's wait time performance for each specialty (e.g., number of surgical cases with reported wait time, median wait time and 90th percentile wait time.
Data Reporting Requirements	• Analysis of prospective data reporting performance.
Surgery Agreement Quality Requirements	The hospital must participate in the Provincial Surgical Oncology Program by: • Ensuring that a Surgeon-in-Chief or a designated lead for cancer surgery is identified by the hospital to work with the Program. • Working with the Program to ensure that over a reasonable period of time the hospital achieves and adheres to CCO provincial standards and guidelines for cancer surgery, such as service organisation (e.g., multidisciplinary care, tumour boards); process (e.g., synoptic pathology reporting, cancer staging improvements); training requirements for providers; volume requirements for institutions; and quality benchmarks. • The hospital has established linkages with other cancer service providers in the region to advance the development of a regional cancer surgery program. • The hospital is working with an identified Regional Vice President, Cancer Services, in the development of a Regional Cancer Program as articulated in the *Ontario Cancer Plan*.

CCO will monitor hospitals' surgery programs using these performance and quality indicators. Additional quality indicators will be developed and implemented as part of the Wait Time Strategy. It is important that the Ministry support CCO's efforts in this area.

Cancer Care Ontario recommends that:

R5 The Ministry of Health and Long-Term Care support Cancer Care Ontario's (CCO) continuing development of performance and quality indicators for cancer surgery.

8.3 Human Resources

A sufficient number of appropriately qualified human resources is needed to meet the increasing demand for cancer surgery. Cancer surgery is performed by surgical oncologists and other specialty surgeons. Surgical oncologists are surgeons who have special training or experience in cancer surgery, who make it their primary and major career activity, and to which they commit the majority or all of their time. Other

surgeons operate on a variety of conditions, and may include aspects of cancer care within their specialty area.

The projected increase in cancer incidence will substantially increase the demand for surgical services. Currently, cancer surgery is under pressure because of human resource shortages (e.g., anaesthesiology, pathology, nursing), an ageing workforce in some specialties, and a reduction of surgical postgraduate training positions that occurred in Ontario over ten years ago. In addition to limited opportunities for subspecialty training in surgical oncology in Ontario's academic health science centres, there is no government support for subspecialty training in surgical oncology. Although there is a need to increase training programs in surgical specialties, the impact of this increase will not be felt for at least a decade. In the short- and medium-term, however, there are strategies that could help meet the growing demand for cancer surgery services.

The *Ontario Cancer Plan* identified the implementation of innovative health human resources as one of its action plans. This includes advanced practice nurses for specific patient populations and oncology nurse practitioners. CCO is committed to supporting the implementation of expanded practice roles across the cancer system by negotiating with regulatory bodies to expand scopes of practice, and collaborating with academic settings for curriculum design and implementation. CCO is also committed to working with the Ministry on cancer human resource strategies, and with the Ministries of Health and Long-Term Care, and Training, Colleges and Universities to address human resource needs of the cancer system.

There are opportunities to improve the efficient and effective use of highly skilled cancer surgeons. The *Report of the Surgical Process Analysis and Improvement Expert Panel* recommended a number of strategies to expand surgical resources including:[30]

- Ministry support for roles that complement and expand surgical resources provided by the surgical specialties such as first assist surgical assistants, Registered Nurse First Assistants (general and advanced practice). These roles are especially important in community hospitals that do not have post-graduate trainees (e.g., fellows and residents).
- Ministry support for a standardised peri-operative technician role that is open to Registered Practical Nurses and other health care providers with appropriate basic health care education, including foreign-trained healthcare providers who are not able to gain employment in their specialty field.
- Hospital support for innovative interdisciplinary peri-operative teams that include the use of other healthcare providers in addition to surgeons, anaesthesiologists and nurses (e.g., technical assistants).

In addition to these strategies, there are opportunities to maximise the skills of cancer surgeons through the innovative use of other healthcare professionals and innovative models of care. For example cancer surgery could benefit from the development of interdisciplinary teams. Some health professionals could take on new responsibilities that

[30] Valerie Zellermeyer, Chair. Prepared for the Wait Time Strategy, June 2005.

surgeons have traditionally done (e.g., coordinators and physician assistants in clinics, operating rooms and on nursing units). In addition to easing the burden of non-surgical work on surgeons, expanded roles for nurses and other professionals would help attract and retain these individuals as "cancer specialists" in their own fields. Although it may be neither feasible nor necessary to develop formal team structures in every hospital with cancer surgery, designating dedicated health professional teams in hospitals that have a major commitment to cancer care, may result in more efficient use of professional expertise.

Although CCO and other Wait Time Strategy expert panels have identified opportunities to improve the efficient and effective use of skilled surgeons, there is a need to train more cancer surgeons to meet the growing demand for this specialty in Ontario. The limited opportunities and funding support for post-residency surgical oncology fellowship positions must be addressed.

Cancer Care Ontario recommends that:

R6 The Ministry of Health and Long-Term Care support the expansion of subspecialty training in surgical oncology in Ontario. This includes funding support for post-residency surgical oncology fellowship positions.

8.4 Technology

Technological advances have significantly changed the way healthcare services are provided. Surgical practice has been characterised by tremendous technological development. For example, minimially invasive surgery has radically transformed many surgical procedures. Laparoscopic techniques for colon cancer surgery are not only altering the way surgery is performed but are also having an enormous impact on hospital stays, surgical volumes and patient care (e.g., fewer complications, reduced pain and trauma).

Many reports have recommended a standardised approach to evaluating new technologies before they are implemented. These reports have also recognised that numerous organisations evaluate new technologies. For example, the Canadian Coordinating Office of Health Technologies (CCOHTA) is an independent, not-for-profit organisation that reviews research that has been done on medical technologies (devices and drugs). Developed in 1989, CCOHTA is funded by Canadian federal, provincial and territorial governments, and provides information to the ministries of health, Health Canada, hospitals and health practitioners to help with healthcare decisions. In Ontario, the Ministry of Health and Long-Term Care's Ontario Health Technology Advisory Committee (OHTAC) assesses new and upcoming diagnostic and treatment-related medical devices and services, equipment and supplies, and laboratory tests and clinical procedures used in any health services delivery setting.

In cancer surgery, there is a need to link the implementation of new technologies with evidence-based care. Furthermore, there is a need to introduce new technologies in a controlled fashion so that patient harm is minimised.

8.5 Funding

Ontario spends approximately $2 billion per year on cancer services.[31] In addition to these direct costs, the indirect costs of cancer – including lost productivity – are estimated to be $5 billion. In- and out-patient surgical costs account for the highest proportion of expenditures. Advances in knowledge and technology have and will continue to change the nature of surgical practice. In some cases, these advances may reduce the cost of care but, more often than not, they will increase the need for resources (at least in the short-term).

The *Ontario Cancer Plan* identified the need to implement two approaches to fund cancer services.

One, developing and testing ***rate complexity-volume funding methodologies for cancer services*** includes: i) developing basic metrics to measure and project activity, volumes and costs; and ii) improving and validating new rates and volume projections. Major cancer surgery is resource intensive. Currently, surgical complexity is not included in hospital funding. A funding model is needed that provides adequate and predictable funding for cancer surgery, incorporates volume and complexity considerations, and can be monitored using available administrative data. Quality indicators should eventually be introduced in the funding formula and continually refined.

Two, developing ***alternate funding plans (AFPs)*** in surgical oncology are needed to recruit and retain surgeons to oncology, and stabilise this professional workforce. AFPs are currently in place for two specialist groups – medical and radiation oncologists – and are being planned for surgery. In 2004, CCO's Surgical Oncology Program developed a framework to allocate sub-specialty review funding in surgical oncology to Ontario's academic health science centres. (This funding was known as "repair funding" which was base funding for disciplines, specialties or programs that needed immediate attention.) In addition to defining a "surgical oncologist," the framework identified quality and performance accountabilities for funding. To date, Ministry funding has not incorporated these accountabilities. CCO strongly believes that sub-specialty repair funding needs to be transformed into an alternate funding plan for surgical oncologists. Furthermore, this AFP should link funding to clear quality and performance accountabilities and deliverables.

[31] Cancer Care Ontario, *Ontario Cancer Plan 2005-2008, Ibid.*

Cancer Care Ontario recommends that:

R7 The Ministry of Health and Long-Term Care transform the Sub-specialty Repair Funding for surgical oncology into an Alternate Funding Plan (AFP) for surgical oncology. This AFP should link funding to clear quality and performance accountabilities and deliverables.

An additional cancer funding issue relates to technology. New technologies increase healthcare costs in the short term due to start-up and training costs, and the need to purchase new equipment. The extent to which these technologies increase costs in the longer term is less clear. Appropriate infrastructure support is needed to support major technological initiatives in surgical oncology such as minimal access surgery and image guidance. Currently, these advancements are being inhibited by the lack of capital investments and operating funding. Any infrastructure support should be strongly linked to organisational performance standards.

Cancer Care Ontario recommends that:

R8 The Ministry of Health and Long-Term Care provide appropriate infrastructure support for major technological initiatives in surgical oncology (e.g., minimal access surgery, image guidance). This support should be strongly linked to organisational performance standards.

8.6 The Organisation of Services to Meet Quality Standards and Future Needs

The *Ontario Cancer Plan 2005-2008* identified the development of regional cancer programs as one of CCO's top priorities. CCO has been actively working with its Regional Vice Presidents to develop a regionalised system of high quality cancer care that includes the full spectrum of cancer-related care including prevention, diagnosis, systemic therapy, radiotherapy, surgery, and supportive and palliative care.

The introduction of Local Health Integration Networks – which are responsible for monitoring and ensuring access to health services within their networks – means that CCO needs to align and link its regional cancer activities with LHINs. For example:

- Each LHIN will have a Regional Vice-President(s) of Cancer Services who will work with the leadership of the LHIN, CCO and the hospitals.
- There may be LHIN-based Communities of Practice that link surgeons and promote the use of evidence-based standards of quality care within and across LHINs.
- There will need to be LHIN-based cancer surgery goals that support quality care standards and guidelines, and performance improvement initiatives.

The roles of CCO, the Ministry and LHINs will be examined in greater detail over the next few months. Special attention will focus on clarifying accountabilities and deliverables for each organisation.

Cancer Care Ontario recommends that:

R9 Cancer Care Ontario, the Ministry of Health and Long-Term Care, and Local Health Integration Networks work together to ensure that CCO's regional cancer activities are aligned and linked with the LHIN structure, and that a regionalised system of high quality cancer surgery is supported.

SECTION D: CONSOLIDATED LIST OF RECOMMENDATIONS

Best Practice Targets and Approaches to Support Standardisation

Cancer Care Ontario recommends that:

R1 The Ministry of Health and Long-Term Care support the development of population-based planning targets for the number of cancer surgeries per 100,000 population in Ontario, adjusted by age and cancer incidence. This work should take into account relevant research, the experience of other jurisdictions and the expert opinion of clinicians.

R2 The Ministry of Health and Long-Term Care support Cancer Care Ontario's (CCO) initiatives that promote the quality, safety and efficiency of cancer surgery. These include the development of surgical standards and guidelines through CCO's Surgical Oncology Program and the Program in Evidence-Based Care, and the implementation of Communities of Practice within and across Local Health Integration Networks.

R3 The Ministry of Health and Long-Term Care strengthen the link between quality and funding so that cancer surgery funding is closely tied to increasing quality and performance expectations.

R4 A priority rating scale with maximum target time frames be adopted for cancer surgery in Ontario. The rating scale – measuring the time from the decision to operate to the operation – should reflect four priority ratings: 0 (oncologic emergency, e.g., airway obstruction, bleeding); I (patients diagnosed with very aggressive tumours, such as central nervous system cancer); II (all patients with known or suspected invasive cancer that does not meet the criteria of urgency category I or III); and III (patients diagnosed with indolent tumours).

Information to Monitor Performance and Support Quality Improvements

Cancer Care Ontario recommends that:

R5 The Ministry of Health and Long-Term Care support Cancer Care Ontario's (CCO) continuing development of performance and quality indicators for cancer surgery.

Human Resources

Cancer Care Ontario recommends that:

R6 The Ministry of Health and Long-Term Care support the expansion of subspecialty training in surgical oncology in Ontario. This includes funding support for post-residency surgical oncology fellowship positions.

Funding

Cancer Care Ontario recommends that:

R7 The Ministry of Health and Long-Term Care transform the Sub-specialty Repair Funding for surgical oncology into an Alternate Funding Plan (AFP) for surgical oncology. This AFP should link funding to clear quality and performance accountabilities and deliverables.

R8 The Ministry of Health and Long-Term Care provide appropriate infrastructure support for major technological initiatives in surgical oncology (e.g., minimal access surgery, image guidance). This support should be strongly linked to organisational performance standards.

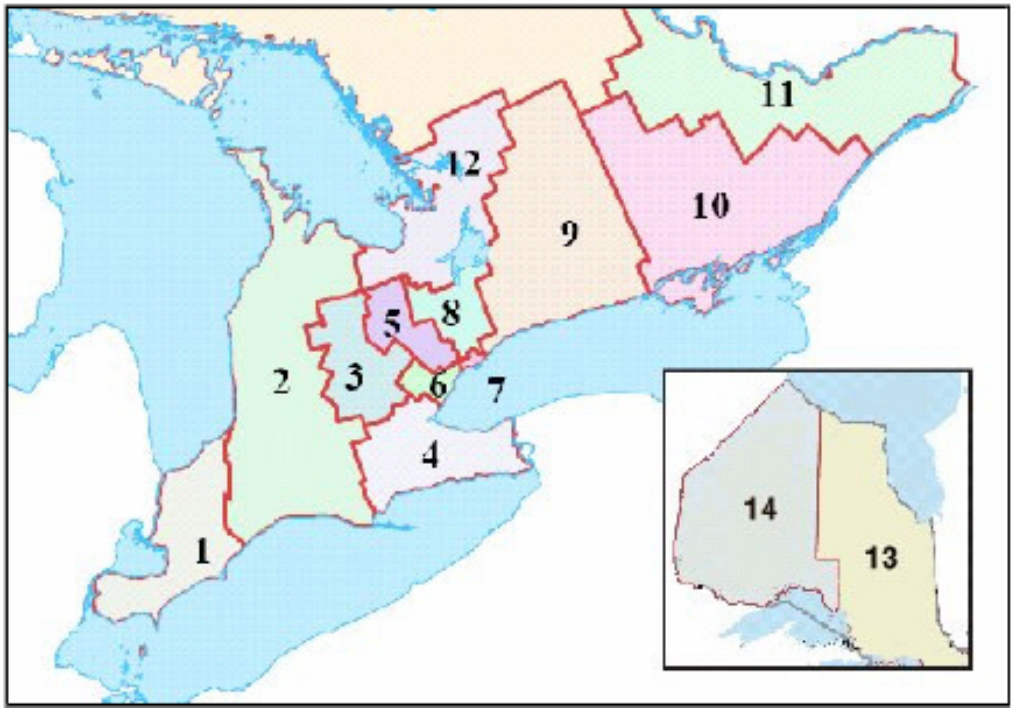
The Organisation of Services to Meet Quality Standards and Future Needs

Cancer Care Ontario recommends that:

R9 Cancer Care Ontario, the Ministry of Health and Long-Term Care, and Local Health Integration Networks work together to ensure that CCO's regional cancer activities are aligned and linked with the LHIN structure, and that a regionalised system of high quality cancer surgery is supported.

APPENDIX 1: LOCAL HEALTH INTEGRATION NETWORKS

Local Health Integration Networks (LHINs)



1. Erie St. Clair	2. South West
3. Waterloo Wellington	4. Hamilton Niagara Haldimand Brant
5. Central West	6. Mississauga Oakville
7. Toronto Central	8. Central
9. Central East	10. South East
11. Champlain	12. North Simcoe Muskoka
13. North East	14. North West

APPENDIX 2: PERI-OPERATIVE BEST PRACTICE TARGETS AND BEST PRACTICE SUPPLY CHAIN TARGETS

The following peri-operative best practice targets and best practice supply chain targets were recommended in the *Report of the Surgical Process Analysis and Improvement Expert Panel* (Valerie Zellermeyer, Chair). Prepared for the Wait Time Strategy, June 2005.

Peri-Operative Best Practice Targets

1. All electively scheduled patients will be screened either by telephone or in person to ensure that they are ready for surgery.
2. All patients and their families will be educated to ensure that they understand the procedure and participate in care.
3. Discharge planning will begin before surgery.
4. Surgery will be conducted on an out-patient basis in a separate location, wherever possible.
5. Surgical patients will be admitted on the same day as the surgery, wherever possible.
6. The time the patient goes into the operating room to the time the patient leaves the operating room will be equal to the time that was booked for the case.
7. The amount of time scheduled for surgery will be as close to the expected time that the surgery should take.
8. Surgeries will begin at the scheduled start time.
9. The "emergency surgeries" that are conducted will reflect true emergencies.
10. Surgical cases that have similar procedures will be grouped as a block, where possible.
11. Surgeons will work in consolidated blocks of time, where possible.

Best Practice Supply Chain Targets

1. Sufficient Capacity to Support the OR Schedule: Peri-operative services will ensure that there is sufficient instrumentation and supplies to support the operating room schedule. Appropriate investments will be made to support surgical activity and throughput.
2. Separate Physical Supports for Clean and Soiled Instrumentation and Supplies: Surgical suites will have separate dedicated physical supports for clean and soiled instrumentation and supplies between peri-operative and central processing services.
3. Instrument Management: Systems will be used to help manage instrumentation, and cleaning and sterilisation processes.
4. Supply Management: Hospitals will link supply consumption to surgical activity by actively managing the inventory supply replenishment process using automated systems and material management support.

5. Standardisation of Instrumentation: To the extent appropriate to the clinical activity of the hospital, peri-operative services will use a limited but sufficient range of instrumentation to enable good choice and minimise inefficiencies and confusion.
6. Standardisation of Vendors: To the extent appropriate to the clinical activity of the hospital, peri-operative services will use a limited but sufficient number of vendors to enable good choice and minimise inefficiencies and confusion.
7. Access Management of Vendors: Hospitals will develop access management policies for their vendors.
8. Standardisation by Procedure or Program: To the extent appropriate for the facility, custom packs, case carts and pick lists will be standardised by procedure or program, rather than by individual physician.
9. Value Analysis of New Technologies: Hospitals will use clearly defined processes to analyse the value of new peri-operative technologies.