

Quality-Based Procedures Clinical Handbook for Cancer Surgery

Ministry of Health and Long-Term Care
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Quality-Based Procedures Clinical Handbook: Cancer Surgery

1.0 Purpose

This clinical handbook has been created to serve as a compendium of the evidence-based rationale and clinical consensus driving the development of the policy framework and implementation approach for Cancer Surgery.

This document has been prepared for informational purposes only. This document does not mandate health care providers to provide services in accordance with the recommendations included herein. The recommendations included in this document are not intended to take the place of the professional skill and judgment of health care providers.

2.0 Introduction

The Ministry of Health and Long-Term Care (Ministry) established Health System Funding Reform (HSFR) in Ontario in 2012 with a goal to develop and implement a strategic funding system that promotes the delivery of quality health care services across the continuum of care, and is driven by evidence and efficiency. HSFR is based on the key principles of quality, sustainability, access, and integration, and aligns with the four core principles of the Excellent Care for All Act (ECFAA):

- Care is organized around the person to support their health;
- Quality and its continuous improvement is a critical goal across the health system;
- Quality of care is supported by the best evidence and standards of care; and
- Payment, policy, and planning support quality and efficient use of resources.

Since its inception in April 2012, the Ministry has shifted much of Ontario's health care system funding away from the current global funding allocation (currently representing a large portion of funding) towards a funding model that is founded on payments for health care based on best clinical evidence-informed practices.

Principles of ECFAA have been further reinforced first by Ontario's Action Plan for Healthcare in January 2012, and recently with Patients First: Action Plan for Healthcare in February 2015, which signals positive transformational activity which will require adaptive responses across sectors and

organizational levels at a time of accelerated change. The Ministry's commitment is to make Ontario the best healthcare system in the world.

The 2012 Action Plan identified HSFR as a lever to advance quality and ensure that the right care gets provided at the right place and at the right time. HSFR focuses on delivering better quality care and maintaining the sustainability of Ontario's universal public health care system. Ontario is shifting the focus of its health care system away from one that has primarily been health care provider-focused, to one that is patient-centred. The 2015 Action Plan continues to put patients at the heart of the health care system by being more transparent and more accountable to provide health care in a way that maximizes both quality and value.

HSFR comprises 2 key components:

- 1.0 Organizational-level funding, which will be allocated as base funding using the Health-Based Allocation Model (HBAM); and
- 2.0 Quality-Based Procedure (QBP) funding, which will be allocated for targeted activities based on a "(price x volume) + quality" approach premised on evidence-based practices and clinical and administrative data.

2.1 'Money follows the patient'

Prior to the introduction of HSFR, a significant proportion of hospital funding was allocated through a global funding approach, with specific funding for select provincial programs, wait times services and other targeted activities. .

However, a global funding approach may not account for complexity of patients, service levels and costs, and may reduce incentives to adopt clinical best practices that result in improved patient outcomes in a cost-effective manner. These variations in patient care evident in the global funding approach warranted the move towards a system where 'money follows the patient'.

Under HSFR, provider funding is based on: the types and quantities of patients providers treat, the services they deliver, the quality of care delivered, and patient experience/outcomes. Specifically, QBPs incent to health care providers to become more efficient and effective in their patient management by accepting and adopting clinical best practices that ensure Ontarians get the right care, at the right time and in the right place.

QBPs were initially implemented in the acute care sector, but as implementation evolves, they are being expanded across the continuum of care, including into the community home care sector, in order to address the varying needs of different patient populations.

Internationally, similar models have been implemented since 1983. While Ontario is one of the last leading jurisdictions to move down this path, this positions the province uniquely to learn from international best practices and pitfalls, in order to create a sustainable, efficient and effective funding model that is best suited for the province and the people of Ontario

2.2 What are Quality-Based Procedures?

QBPs are clusters of patients with clinically related diagnoses or treatments that have been identified using an evidence-based framework as providing opportunity for process improvements, clinical re-

design, improved patient outcomes, enhanced patient experience, and potential health system cost savings.

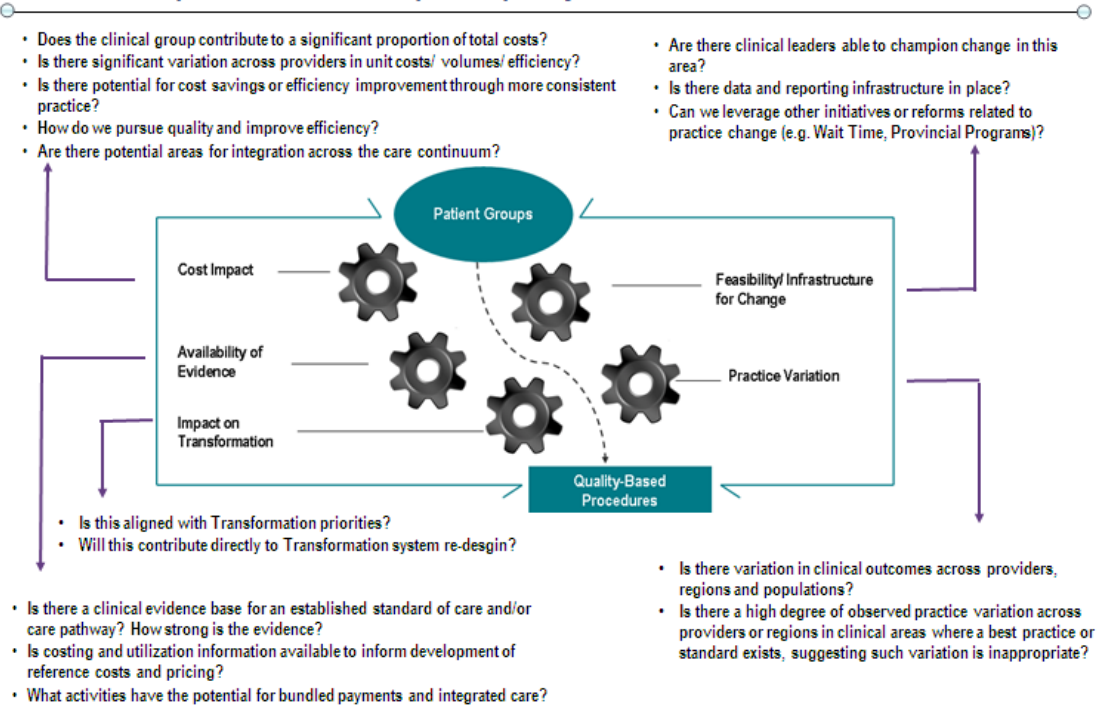
Initially developed in the acute (hospital) sector, QBP were defined as “procedures.” However, as implementation evolved since the introduction of QBP in 2012, so too has the approach. Currently, the expanded focus is on care provided in other parts of the health care sector with a focus on a more functional/programmatic/population-based approach. As a result, the definition of

QBP is expanding to include Quality-Based Procedures, Programs and Populations. QBP have been selected using an evidence-based framework. The framework uses data from various sources such as, but not limited to: the Discharge Abstract Database (DAD) and National Ambulatory Care Reporting System (NACRS) adapted by the ministry for its HBAM repository. The HBAM Inpatient Grouper (HIG) groups inpatients based on the diagnosis or treatment responsible for the majority of their patient stay. Additional data has been used from the Ontario Case Costing Initiative (OCCI), and Ontario Cost Distribution Methodology (OCDM). Evidence published in literature from Canada and international jurisdictions, as well as World Health Organization reports, have also assisted with the definition of patient clusters and the assessment of potential opportunities (e.g. reducing variation, improving patient outcomes, sustainability).

The evidence-based framework assesses patients using five perspectives, as presented in Figure 1. It is this evidence-based framework that has identified QBP that have the potential to improve quality of care, standardize care delivery across the province and show increased cost efficiency.

Figure 1: Evidence-Based Framework

An evidence and quality-based framework has identified Quality-Based Procedures that have the potential to both improve quality outcomes and reduce costs



2.2.1 Practice Variation

Practice variation is the cornerstone of the QBP evidence-based framework. A demonstrated large practice or outcome variance across providers or regions in clinical areas, where a best practice or standard exists, represents a significant opportunity to improve patient outcomes through focusing on the delivery of standardized, evidence-informed practices. A large number of 'Beyond Expected Length of Stay' and a large standard deviation for length of stay and costs were flags to such variation.

2.2.2 Availability of Evidence

A significant amount of research has been conducted and collected, both nationally and internationally, to help develop and guide clinical practice. Working with clinical experts, best practice guidelines and clinical pathways can be developed for QBPs and establish appropriate evidence-informed indicators. These indicators can be used to measure the quality of care and help identify areas for improvement at the provider level, and to monitor and evaluate the impact of QBP implementation.

Clinical leaders play an integral role in this process. Their knowledge of the identified patient populations, and the care currently provided and/or required for these patients, represents an invaluable element in the assessment of much needed clinical delivery and clinical process improvements. Many groups of clinicians have already developed care pathways to create evidence-informed practice. There is now an opportunity for this knowledge to be transferred provincially

2.2.3 Cost Impact

The provincial footprint from a financial perspective also impacts the selection of the QBP. This may include QBPs that are high volume and low-cost, as well as those that are low-volume and high costs (i.e. specialized procedures that demonstrate opportunity for improvement).

A selected QBP should have, as a guide, no less than 1,000 cases per year in Ontario and represent at least one percent of the provincial direct cost budget. For patient cohorts that fall below these thresholds, the resource requirements to implement a QBP can be restrictive. Even where the patient cohorts represent an opportunity for improvement, it may not be feasible, even if there are some cost efficiencies, to create a QBP.

2.2.4 Impact on Transformation

The **Action Plan for Health Care** was launched in January 2012 and is already making a difference to Ontarians and our health care system:

- We've bent the cost curve since 2011/12
- We're improving the health of Ontarians
- We're enhancing the experience of Ontarians when they use the health system
- We're working with our health sector partners to improve the quality of health care

The next phase of Transformation will build on and deepen implementation of the Action Plan. HSFR is a key element of the Health System Transformation Agenda by ensuring sustainability and quality.

Selected QBP should, where possible, align with the government's transformational priorities. In addition, the impact on transformation of certain patient populations hitherto not prioritized by the framework can be included as QBPs. This will ensure that QBPs are wide ranging in their scope e.g. paediatric patient populations or patients requiring community care. QBPs with a lesser cost impact but a large impact on the provincial health care system may still be a high priority for creation and implementation.

2.3 How will QBPs encourage the delivery of high quality, evidence-based care and innovation in health care delivery?

The QBP methodology is driven by clinical evidence and best practice recommendations from the Clinical Expert Advisory Groups (Advisory Groups). Advisory Groups are comprised of cross-sectoral, multi-geographic and multi-disciplinary membership, including representation from patients. Members leverage their clinical experience and knowledge to define the patient populations and recommend best practices.

Once defined, these best practice recommendations are used to understand required resource utilization for QBPs and will further assist in the development of evidence-informed prices. The development of evidence-informed pricing for the QBPs is intended to incent health care providers to adopt best practices in their care delivery models, maximize their efficiency and effectiveness, and engage in process improvements and/or clinical re-design to improve patient outcomes.

Best practice development for QBPs is intended to promote standardization of care by reducing inappropriate or unexplained variation and ensuring that patients get the right care, at the right place and at the right time. Best practice standards will encourage health service providers to ensure that appropriate resources are focused on the most clinically and cost-effective approaches.

QBPs create opportunities for health system transformation where evidence-informed prices can be used as a financial lever to incent providers to:

- Adopt best practice standards;
- Re-engineer their clinical processes to improve patient outcomes;
- Improve coding and costing practices; and
- Develop innovative care delivery models to enhance the experience of patients.

An integral part of the enhanced focus on quality patient care is the development of indicators to allow for the evaluation and monitoring of actual practice and support on-going quality improvement.

In addition, the introduction of additional QBPs such as outpatient and community-based QBPs will further help integrate care across sectors and encourage evidence-based care across the continuum.

3.0 Cancer Surgery

Cancer surgery and surgeons play a key role in many aspects of the patient's journey:

- Diagnosis:** Biopsy of a tumour and other investigations including radiological investigations to determine whether the growth is cancerous (malignant) or noncancerous (benign).
- Staging:** Endoscopic evaluations such as panendoscopy, mediastinoscopy, needle biopsies, colonoscopies, etc. that allow evaluation of the extent and size of the tumour.
- Curative:** Removal of the entire cancerous tumour or growth from the body.
- Palliative:** Surgery used to treat cancer when incurable with the intent being to relieve discomfort, manage symptoms or increase effectiveness of other cancer treatments.
- Reconstruction and Rehabilitation:** Following curative surgery a patient's appearance or body function may be altered. Restorative surgery restores appearance or function some examples include, head and neck microvascular surgery, breast, bladder or rectal reconstruction surgery.

Cancer Surgery procedures are carried out by a wide variety of surgeons, those who may specialize in cancer patients exclusively but more commonly cancer surgery is performed by surgeons who do not exclusively treat cancer patients. There are over 55,000 curative cancer surgeries every year which include several hundred procedures types across 70 hospitals in Ontario.

3.1 Cancer Surgery Funding History

Cancer Care Ontario (CCO) has been advising the Ministry of Health and Long Term Care (MOHLTC) on the allocation of cancer surgery funding through the Cancer Surgery Agreement (CSA) program since 2004. The intent of the CSA was to decrease wait times by ensuring that high quality cancer surgery is performed across Ontario in a timely manner.

CSA funds were incremental and accounted for approximately 20% of all cancer surgeries in Ontario across 35 hospitals. As a condition of receiving funding, hospitals were required to sign the Cancer Surgery Agreements (CSA). This agreement linked incremental funding with quality improvement initiatives, clear accountabilities for performance, and the development of regional cancer programs.

Over the course of the CSA program many significant achievements were accomplished. These initiatives include regionalization of high-complexity surgeries to designated centres where a volume/outcome relationship is evident, the spread of Multidisciplinary Cancer Conferences across 70 hospitals and several improvements in clinical guideline recommendations, such as decreasing the positive margin rates in prostate surgery, increasing the availability of breast surgery with immediate reconstruction and increasing the use of guideline concordant colorectal preoperative staging.

To do this CCO distributes annual funding to participating hospitals and monitors the conditions set out in each agreement in association with funding and meeting the annual targets. The Regional Vice-Presidents (RVP) of Cancer Services actively works with hospitals in their regions to identify difficulties completing cases and develop solutions to meet the agreed-upon targets.

With the implementation of QBP for cancer surgery the goal is to:

- a) Use lessons learned from the CSA process and apply them to QBP
- b) Transition all of CSA into QBP funding
- c) Allow the funding to follow the patient providing equitable access and distribution of funds

3.2 Cancer Surgery QBP Scope

The cancer surgery QBP focuses on the treatment phase of the patient journey which is the surgical procedure within an operating room. By definition, the decision for surgical treatment has been made. It begins at the pre-admission visit (approximately 1 week before the surgical procedure) and ends when the patient is discharged from the hospital. In the future, the QBP may expand into the pre- and post-treatment phases.



NOTE: The initial phase for Cancer Surgery QBP implementation will focus on the Treatment phase.

Figure 2: Patient Journey Scope



Definition Principles

In general, the Cancer Surgery QBP will include excisions (partial, total and radical) and amputations of neoplasms (benign and malignant) performed in a fully equipped operating room.

Diagnosis:

- Only the Most Responsible Diagnosis is considered.
- Includes all C codes (malignant neoplasms) from the ICD-10. This is intended to capture all of the organ specific and metastases diagnoses.
 - Exceptions can be made in situations where the diagnosis is well defined prior to surgery (i.e. prostate cancer)
- Only D codes (benign neoplasm) from the ICD-10 list that are specific to the relevant body part only

Procedure codes:

- Only the Primary Intervention field is considered (see spinal for an exception).

- Includes all excision and amputation codes where the procedures are likely to be performed in an operating room the majority of the time and intended as a definitive therapeutic procedure for cancer
 - *Per orifice procedures* are included if it is a definitive therapeutic procedure performed in an operating room for a neoplasia

A list of diagnosis and procedure codes for each disease site can be found in **Appendix A**.

Diseases Sites

The following disease sites are included in the Cancer Surgery QBP:

Table 1:

Transition Year	Disease Sites		
FY2015/16	<ul style="list-style-type: none"> • Colon • Rectum • Prostate 		
FY2016/17	<ul style="list-style-type: none"> • Thyroid • Breast 		
FY2018/19	<ul style="list-style-type: none"> • Neurosurgical <ul style="list-style-type: none"> ○ Brain ○ Spinal • Thorax <ul style="list-style-type: none"> ○ Lung – DC* ○ Esophagus – DC* ○ Thorax-other • Abdominal <ul style="list-style-type: none"> ○ Liver – DC* ○ Pancreas – DC* • Genitourinary <ul style="list-style-type: none"> ○ GU (Bladder, kidney, testes, etc) • Gynaecology <ul style="list-style-type: none"> ○ Hysterectomy (<i>separate Clinical Handbook can be found at: http://www.health.gov.on.ca/en/pro/programs/ecfa/docs/hb_hysterectomy.pdf</i>) 		
FY2019/20	<table border="0"> <tr> <td> <ul style="list-style-type: none"> • Ophthalmic • Head and Neck • Endocrine <ul style="list-style-type: none"> ○ Endocrine-Other • Abdominal <ul style="list-style-type: none"> ○ Stomach ○ Abdominal-Other </td> <td> <ul style="list-style-type: none"> • Gynaecology <ul style="list-style-type: none"> ○ Gynaecology (minus hysterectomy) • Sarcoma <ul style="list-style-type: none"> ○ Bone ○ Soft Tissue • Skin – Soft Tissue • Non-site Specific </td> </tr> </table>	<ul style="list-style-type: none"> • Ophthalmic • Head and Neck • Endocrine <ul style="list-style-type: none"> ○ Endocrine-Other • Abdominal <ul style="list-style-type: none"> ○ Stomach ○ Abdominal-Other 	<ul style="list-style-type: none"> • Gynaecology <ul style="list-style-type: none"> ○ Gynaecology (minus hysterectomy) • Sarcoma <ul style="list-style-type: none"> ○ Bone ○ Soft Tissue • Skin – Soft Tissue • Non-site Specific
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***NOTE:** Lung, Esophagus, Liver, Pancreas, Head and Neck and some Gynaecology procedures are to be performed at a Designated Centre. These disease sites will be denoted by the suffix –DC meaning Designated Centre. For example, Lung-DC and Liver-DC. These cases should only be performed in a Designated Centre.

Exceptions to disease sites are:

- Cardiac neoplastic cases are not included at this time.
- Skin procedures are included when the procedure involves a regional node dissection or pedicle flap in a Skin – Soft Tissue disease site (eg, Excision partial, skin of arm open [excisional] approach using free flap).
 - Most skin procedures are NOT performed in an operating room but in a clinic or procedure room and often not in a hospital setting; many procedures may not be captured in DAD and NACRS records. As a result, they are not currently included in the QBP

Inclusions / Exclusions

The following inclusion and exclusion criteria are applicable to all disease sites.

Table 2:

<u>Factor</u>	Included	Excluded
Diagnosis & Procedure Codes	See disease site specific diagnosis and procedure code lists in Appendix A.	Records where main intervention is missing
Data Source	NACRS* DAD	-
Visit Type/ Activity	Day Surgery* In-patient <ul style="list-style-type: none"> • Elective cases • Urgent cases • Emergent cases 	<ul style="list-style-type: none"> • Interventions flagged as ‘Out of Hospital’ • Interventions flagged as ‘Abandoned’ • Interventions flagged as ‘Cancelled’
Additional Patient Factors	<ul style="list-style-type: none"> • Government insured patients only (i.e. OHIP) • Patients 18 years of age and over 	<ul style="list-style-type: none"> • Out-of-province records (i.e., Province not equal “ON”) • Records where responsibility for Payment is not equal to ‘01’ • Records where calculated age is less than 18 years. Age is calculated as the difference between admit date and birth date

* There are two exceptions, Prostate and Colorectal cancer surgery do not include Day Surgery at the advice of the Clinical Expert Panels and therefore would exclude NACRS cases.

4.0 Best Practice in Cancer Surgery

4.1 Overview

The best practice pathway provides high level recommendations on test, assessments, consults, etc. that should be considered to optimize care and outcomes for patients undergoing cancer surgery. The best practice pathway incorporate principles of care that are applicable to all types of cancer surgery; however, additional disease-site specific recommendations can be found in each disease-site chapter of the handbook. The pathway reflects current available evidence, however it is recognized that changes to the evidence may occur between review cycles.

Best practice has been categorized into the following stages:

1. Pre-Surgical Assessment (prior to surgery)
2. Day of Surgery (Day 0): Pre-Operative Care Unit (POCU)
3. Day of Surgery (Day 0): Operating Room
4. Day of Surgery (Day 0): Post-Anesthetic Care Unit (PACU)
5. Post-operative Surgery: Day 1 onward (day after OR)

4.2 Pathway Development Process

To develop the best practice pathway of care for cancer surgery, the following process was followed:

- A literature scan was completed for existing guidelines
- Existing care paths were collected from the hospitals of QBP working group members
- Expert consensus was obtained

Relevant Guidelines and Materials

The best practice care pathway for cancer surgery incorporates recommendations from several current guidelines:

- Choosing Wisely Canada
- Guidelines to the Practice of Anesthesia, Revised Edition 2015
- Best Practice in Surgery: Enhance Recovery After Surgery (ERAS) for General Surgery (<http://www.bestpracticeinsurgery.ca/guidelines/general-surgery>)
- Venous Thromboembolism Prophylaxis and Treatment in Patients with Cancer: American Society of Clinical Oncology Clinical Practice Guideline Update 2014
- Smoking cessation guidelines:

- National Comprehensive Cancer Network (NCCN) Smoking Cessation Guideline, Version 1 2016
- American Society for Clinical Oncology (ASCO) Tobacco Cessation Guide for Oncology Providers (<https://www.asco.org/sites/new-www.asco.org/files/content-files/blog-release/documents/tobacco-cessation-guide.pdf>)

4.3 General Best Practice Pathway for Cancer Surgery Patients

The following pathway describes the evidence based best practice for all cancer surgeries. Disease-site specific best practices are summarized in the disease-site specific chapters. Modifications of this pathway make be appropriate for an individual patient or group of patients, based on clinical judgement by the treating physician.

Phase of Care	Best Practice (All Cancer Surgery)
Pre-Surgical Assessment (~4 weeks prior to check-in to check-in)	<p>Tests:</p> <ul style="list-style-type: none"> • Ensure all diagnostic and staging tests are complete, and appropriateness and indications for surgery confirmed prior to pre-surgical assessment • The following tests should not be routinely performed but are recommended if clinically indicated: <ul style="list-style-type: none"> ○ ECG if patient has heart disease, diabetes or other risk factors for a cardiac condition ○ Serum biochemistry ○ PT/PTT/INR for patients on anticoagulant therapy or who have liver disease ○ CBC ○ Chest x-ray ○ Urinalysis if signs of urinary tract infection ○ Pregnancy test if pregnancy possible <p>Assessments:</p> <ul style="list-style-type: none"> • Physical assessment (vital signs, height/weight/BMI) • Pre-operative questionnaire (patient history and physical) <p>Consults:</p> <ul style="list-style-type: none"> • Anesthesiology/Pain management consult - <i>as required</i> • Community Care Access Centre (CCAC) - <i>as required</i> • Internal Medicine (Cardiology, etc.) - <i>as required</i> • Medical and/or Radiation Oncology - <i>as required</i> • Physiotherapy – <i>as required</i> • Psychosocial referral – <i>as required</i> <p>Medications:</p> <ul style="list-style-type: none"> • Review all current medication • Note allergies and intolerances • Provide information about discontinuation of NSAIDS/ antiplatelet/ anticoagulants if necessary

	<ul style="list-style-type: none"> • Complete medication reconciliation form <p>Patient/Family Teaching:</p> <ul style="list-style-type: none"> • Educate patient on the surgical procedure • Review pre-and post-operation events and expectations • Counsel patient on smoking cessation prior to surgery • Review plan for pain management • Review self-care measures and post op wound management • Review patient education booklets, pamphlets, etc. • Clarify any patient questions <p>Discharge Planning:</p> <ul style="list-style-type: none"> • Review discharge plan with the patient including, expected length of stay, discharge date, and identify potential issues that could delay discharge • Discuss available supports on discharge • Involve Social worker or CCAC if necessary
<p>Day of Surgery – Pre-Operative Care Unit (POCU)</p>	<p>Tests:</p> <ul style="list-style-type: none"> • Ensure tests completed as ordered <p>Assessments:</p> <ul style="list-style-type: none"> • Ensure medications have been taken as directed • Vital signs, O2 saturation <p>Medications:</p> <ul style="list-style-type: none"> • VTE prophylaxis (mechanical, chemical or combination) administered in the POCU, operating room or PACU post-op should be considered for at risk patients (i.e. high Caprini score or other risk factors) as per institutional protocol. • Surgical site infection (SSI) prophylaxis should be considered • Multimodal analgesic regimen, including use of regional anesthesia when appropriate. Opioid sparing approach should be considered for all patients. <p>Nutrition:</p> <ul style="list-style-type: none"> • No solid food after midnight the day prior to surgery • Clear liquids until 2-3 hours prior to surgery • NPO 2-3 hours prior to surgery
<p>Day of Surgery – Operating Room</p>	<p>Assessments:</p> <ul style="list-style-type: none"> • Complete surgical checklist • Pre-operative marking to verify laterality, when appropriate <p>Treatments:</p> <ul style="list-style-type: none"> • Ensure all equipment is available • Ensure all human resources are present (OR nurse, surgeon, anesthesiologist, radiology as needed) • Surgical plan confirmed (approach, extent of resection, reconstruction options) • Pathology requisition completed by surgeon or delegate • Ensure specimen is appropriately labelled and oriented to send to pathology for processing/assessment <p>Medications:</p>

**Day of Surgery –
Post Anesthetic
Care Unit
(PACU - Day 0)**

- Patient specific medication
- Multimodal analgesic regimen, including use of regional anesthesia when appropriate. Opioid sparing approach should be considered for all patients.
- Avoidance of prophylactic drains when possible (e.g. foley catheters, close suction drains, nasogastric tubes, etc.)

Assessment:

- Post-operative assessment by nurse and/or surgeon
- Vital signs (vascular vitals, neuro vitals when appropriate)
- Monitor liquid input and output
- Monitor patient recovery (e.g. wound dressing, pain, nausea)

Consults:

- Acute Pain Services - as required
- CCAC consult – as required

Medication:

- Patient specific medication
- Antiemetic
- Multimodal analgesic regimen, including use of regional anesthesia when appropriate. Opioid sparing approach should be considered for all patients.
- VTE prophylaxis (mechanical, chemical or combination) administered in the POCU, operating room or PACU post-op should be considered for at risk patients (i.e. high Caprini score or other risk factors) as per institutional protocol.
-

Activity:

- Breathing and recovery exercises; other activity as tolerated
- Early independent ambulation is recommended

Nutrition:

- Diet as tolerated

**Post-operative
Surgery: Day 1+
onward (day
after operating
room or after
PACU for day
surgery
patients)**

Tests:

- Blood work and imaging as appropriate

Assessment:

- Vital signs (vascular vitals, neuro vitals when appropriate)
- Monitor input and output
- Monitor patient recovery (e.g. wound dressing, pain, nausea)
- Early removal of drains is recommended
- Discharge assessment by nurse and/or surgeon (system, pain, recovery)

Consults:

- Acute Pain Services - *as required*
- CCAC consult – *as required*
- Physiotherapy consult - *as required*
- Occupational therapy consult – *as required*

Medication:

- Patient specific medication

- Multimodal analgesic regimen, including use of regional anesthesia when appropriate. Opioid sparing approach should be considered for all patients.
- Antiemetic
- VTE prophylaxis (mechanical, chemical or combination) administered in the POCU, operating room or PACU should be considered for at risk patients (i.e. high Caprini score or other risk factors) as per institutional protocol

Activity:

- Breathing and recovery exercises
- Early ambulation

Nutrition:

- Diet as tolerated

Patient/Family Teaching:

- Ensure patient has education materials (education booklets, pamphlets, etc.)
- Review plan for pain management, including prescription and medication protocol
- Review signs and symptoms of wound infection and when to call the doctor
- Exercise program, including post-op breathing and coughing exercises
- Review pre-operative teachings (home management of wound, pain management, stoma care, etc.)
- Review post-surgical diet

Discharge Planning

- Clarify any patient questions
- Discuss follow-up visit

5.0 Breast Cancer Surgery

5.1 Overview

Breast cancer is the most commonly diagnosed cancer among women in Ontario, accounting for approximately 26%¹ of all women's cancers. Breast cancer has one of the highest survival rates, when compared to other cancers, with a five-year relative survival rate of approximately 88%¹.

Breast cancer treatments include surgery, radiotherapy, chemotherapy, hormone therapy, and targeted (biological) therapy. The type of treatment that an individual receives depends on factors that include the type and stage of the cancer, as well as the size and location of the tumour. Most women diagnosed with non-metastatic breast cancer are candidates for local treatment options, such as surgery.

Breast cancer surgery

Breast cancer surgery is performed by general surgeons while plastic surgeons complete breast reconstruction procedures. There are several surgical treatment options for the removal of breast cancer are, including:

- A **lumpectomy** (also known as breast-conserving surgery) is the removal of the cancer and a margin of breast tissue surrounding the affected area. The additional tissue removal acts as a safety perimeter to try to remove all of the cancer. This procedure is less invasive than a mastectomy and is usually combined with radiation therapy.
- A **mastectomy** (complete removal of breast) is used for more advanced types of breast cancer, when a woman has small breasts, or extensive ductal carcinoma in situ. A mastectomy procedure removes the entire breast tissue, and can include removal of the nipple or can be a nipple and/or skin sparing procedure.

In addition, patients may require the surgical biopsy and/or removal of the breast-associated lymph nodes. Options for biopsy/removal of these lymph nodes include:

- A **sentinel lymph node biopsy (SLNB)** is the removal of the sentinel lymph node to help determine if breast cancer has spread to lymph node(s) in the axilla. The sentinel lymph nodes are the first lymph nodes that the cancer spreads to. If the biopsy of the sentinel node is cancer free it indicates the remaining axillary lymph nodes are unlikely to contain cancer. This procedure helps establish the stage of breast cancer.
- An **axillary lymph node dissection (ALND)** is the removal of fatty tissue and a number of lymph nodes from the underarm area. This procedure can occur at the same time as a lumpectomy or mastectomy, or at a separate encounter. This procedure is usually performed if the lymph nodes are known to contain cancer, or there is a high suspicion that they contain cancer. The tissue is reviewed by a pathologist to determine the number of lymph nodes that are positive for cancer cells – this helps to establish the stage of breast cancer.

¹ Canadian Cancer Society

Breast Cancer Reconstruction Surgery:

Breast reconstruction surgery rebuilds the breast for women who have had an entire breast removed by mastectomy due to breast cancer. Women who have had breast conserving surgery (such as a lumpectomy) may not need reconstruction. Breast reconstruction is done by a plastic surgeon or appropriately trained general surgeon and may be performed at the time of mastectomy or at a later date.

Reconstruction performed at the same time as the mastectomy is referred to as **Immediate (or primary) Reconstruction** while reconstruction performed after the initial mastectomy is referred to as **Delayed (or secondary) Reconstruction**.

Types of Reconstruction:

The appropriate surgical operation for an individual patient depends on several factors including breast size, the adequacy of skin flaps and whether radiotherapy is planned or has been previously used, and reconstruction of the nipple/areola.

Breast reconstruction surgery has been categorized into the following areas:

- a) Implant only
- b) Microvascular tissue with or without implants
- c) Non-Microvascular tissue with or without implants

Patient education and awareness about their options for reconstruction is an important consideration to be able to make informed decisions. All women undergoing breast cancer surgery should have access to a patient education program and be aware of their choices regarding breast cancer surgical treatment and reconstruction.

Prophylactic Breast Surgery

The advent of identification of inherited genes in cancer has improved the ability to identify patients that may be at increased risk of developing breast cancer during their lifetime. Prophylactic mastectomy may be recommended after a thorough evaluation (genetic counselling) of an individual's personal risk of breast cancer. In most cases, this is elective surgery as the patient must weigh their risk against the side effects of the proposed treatment. Removal of the organ usually does not detect any cancer as the organ is removed before the cancer develops.

Women who decide to have prophylactic mastectomy may choose to have breast reconstruction surgery at the same time as prophylactic mastectomy.

Patients at high risk, according to the recommendations of the Cancer Care Ontario Breast Cancer Disease Pathway Management Group, may be appropriate candidates for prophylactic mastectomy. Confirmation of high risk breast cancer status must be established prior to surgery in order to ensure eligibility for QBP based funding. A pre-approval process must be completed to ensure in-scope status.

5.2 Best practices for Breast Cancer Surgery

In addition to the the general best practice pathway for cancer surgery defined in Section 4.3 this section includes additional recommendations specifically for patients undergoing breast cancer surgery.

As a number of breast procedures are included in the QBP, the best practice recommendations are separated into several groups based on procedure type:

- 1) Breast ablation surgery patients (mastectomy, lumpectomy, ALND, SLNB)
- 2) Immediate and delayed reconstruction patients
- 3) Prophylactic mastectomy patients

The QBP scope includes all breast cancer surgeries, the specific diagnosis and procedure codes used to define these surgeries can be found in Appendix A.



NOTE: It may be necessary to refer to more than one best practice pathway for breast cancer surgery if a patient received more than one procedure. For example, if a patient received a mastectomy with immediate reconstruction, please refer to both the breast ablation surgery pathway and the breast reconstruction pathway.

Relevant Guidelines

- *Cancer Care Ontario*: Sentinel Lymph Node Biopsy in Early-Stage Breast Cancer July 2009 (<https://www.cancercareontario.ca/en/guidelines-advice/types-of-cancer/571>)
- *Cancer Care Ontario*: Special Report: Multidisciplinary Cancer Conferences (MCC) June 2006 (<https://www.cancercareontario.ca/en/guidelines-advice/types-of-cancer/286>)
- *Cancer Care Ontario*: Breast cancer reconstruction surgery (immediate and delayed) across Ontario: Patient indications and appropriate surgical options (2016) (<https://www.cancercareontario.ca/en/guidelines-advice/types-of-cancer/31721>)
- *Cancer Care Ontario*: Breast Cancer Pathway Map (2015) (<https://www.cancercareontario.ca/en/pathway-maps/breast-cancer>)

Best Practice for Breast Cancer Surgery

Phase of Care	Recommended Best Practice	Breast Ablation Surgery (mastectomy, lumpectomy, ALND, SLNB)	Breast Reconstruction (Immediate & Delayed)	Prophylactic Mastectomy
Pre-Surgical Assessment (~4 weeks prior to check-in to check-in)	Tests: <ul style="list-style-type: none"> • Appropriate breast imaging • Confirmation that patient is at high-risk for developing breast cancer 	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>
	Treatments: <ul style="list-style-type: none"> • Sentinel lymph node injection, as required – on day prior to surgery only if this service is unavailable on day of surgery • Localization, as required - on day prior to surgery only if this service is unavailable on day of surgery 	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/>		
	Consults: <ul style="list-style-type: none"> • Plastic Surgery, as required 		<input checked="" type="checkbox"/>	
	Medications: <ul style="list-style-type: none"> • Provide information about discontinuation of endocrine and/or hormonal therapy for patients receiving a microsurgical reconstruction 		<input checked="" type="checkbox"/>	
	Patient/Family Teaching: <ul style="list-style-type: none"> • Teach arm exercises (particularly important for patients receiving ALND and/or breast reconstruction) • Review options for breast reconstruction and provide reconstruction specific teaching (pre-operative preparation for flap based reconstruction, prosthesis information etc.)” 	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Day of Surgery – Pre- Operative Care Unit (POCU)	Assessments: <ul style="list-style-type: none"> • Presurgical marking of surgery site, including laterality • Pre-surgical marking of flap donor site, if using flap reconstruction 	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/>	
	Treatments: <ul style="list-style-type: none"> • Sentinel lymph node injection – as required • Localization method – as required 	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/>		
	Medication: <ul style="list-style-type: none"> • VTE prophylaxis is recommended for all patients receiving a flap reconstruction (micro and non- 		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

Best Practice for Breast Cancer Surgery				
Phase of Care	Recommended Best Practice	Breast Ablation Surgery (mastectomy, lumpectomy, ALND, SLNB)	Breast Reconstruction (Immediate & Delayed)	Prophylactic Mastectomy
	microsurgical) and should be administered as per institution protocol			
Day of Surgery – Operating Room	Assessments: <ul style="list-style-type: none"> Imaging of localization – as required Intraoperative frozen section – as required Essential intra-operative imaging available – as required When lesion localization techniques are used, specimen imaging to confirm complete excision 	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/>		
	Treatments: <ul style="list-style-type: none"> Lumpectomy, Mastectomy (+/- SLNB or ALND), ALND or SLNB performed Immediate (immediately following mastectomy) or delayed reconstruction (unilateral or bilateral). Types of reconstruction include: <ul style="list-style-type: none"> Implants only Non-microsurgical (+/- implants) Microsurgical (+/- implants) Ensure the specimen is sent to pathology in the recommended timeframe for molecular receptor analysis <ul style="list-style-type: none"> Time to specimen fixation should be within 1 hour Ensure all equipment is available <ul style="list-style-type: none"> Ensure implants or tissue expanders are available in the OR – as required Ensure microscope is available for microsurgical procedures Ensure all human resources are present, <ul style="list-style-type: none"> If reconstruction is being performed this should include a plastic surgeon 	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/>	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/>	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/>

Best Practice for Breast Cancer Surgery				
Phase of Care	Recommended Best Practice	Breast Ablation Surgery (mastectomy, lumpectomy, ALND, SLNB)	Breast Reconstruction (Immediate & Delayed)	Prophylactic Mastectomy
Day of Surgery – Post Anesthetic Care Unit (PACU - Day 0)	Treatments: <ul style="list-style-type: none"> Monitor flap viability, if flap reconstruction performed <ul style="list-style-type: none"> For non-microsurgical flap reconstructions, assess flap viability q 4-8 hours For microsurgical flap reconstructions, assess flap viability every hour for the first 24 hours 		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Post-operative Surgery: Day 1+ onward (day after operating room or after PACU for day surgery patients)	Treatments: <ul style="list-style-type: none"> Monitor flap viability, if flap reconstruction performed <ul style="list-style-type: none"> For non-microsurgical flap reconstructions, assess flap viability q 4-8 hours For microsurgical flap reconstructions, assess flap viability every hour for the first 24 hours 		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
	Medications: <ul style="list-style-type: none"> VTE prophylaxis is recommended for all patients receiving a flap reconstruction (micro and non-microsurgical) and should be administered as per institution protocol. Antibiotic prophylaxis should be considered for patients that received an implant to prevent infection 		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
	Activity: <ul style="list-style-type: none"> No heavy lifting greater than 10lbs for 1-3 weeks following surgery 		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
	Patient/Family Teaching: <ul style="list-style-type: none"> Review signs and symptoms of implant infection, as required 		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

6.0 Colorectal Cancer Surgery

6.1 Overview

Treatment of colon or rectal cancer depends on the size, location and spread of the cancer. Different modalities of therapy may be employed to treat the disease. The main treatment for colorectal cancer is surgery, but often multiple treatments are given including systemic therapy, therapies in interventional radiology, and radiation therapy. Some patients may access one or more of these therapies in the management of their disease. Surgical resection is often the main treatment for earlier stage colon and rectal cancer.

Colorectal cancer surgery is performed by general surgeons, treating a number of diseases, or colorectal surgical oncologists, focusing specifically on the treatment of colorectal cancers

The goals of colorectal cancer surgery are to a) remove cancer completely, b) remove adjacent lymph nodes and c) re-join the bowel to provide normal or near normal function. Achieving these goals is dependent on a number of factors such as location of tumour, tumour size, timing of surgery, stage and patient status and preferences. There are different types of surgical procedures including the following:

1. **Bowel resection with anastomosis:** A part of the bowel with the cancer is removed and then the bowel is joined back together (anastomosis) either with staples or sutures.
2. **Bowel resection with an anastomosis and a (temporary) stoma:** Whenever the bowel is joined together, there is always a chance it might not heal. Where this risk is high, sometimes a temporary stoma (ileostomy or colostomy) is constructed so digestive waste collects in the bag to allow the bowel to heal. In the future the temporary stoma can be closed once the surgeon is certain that the join (anastomosis) is healed.

Hartmann's resection: Part of the bowel is removed which includes the diseased area but instead of joining the bowel back together, a stoma is performed. The remaining colon or rectum is usually closed off with staples or sutures and left inside the abdomen. This is often done in emergency situations and the bowel can often be joined together at a later date.

3. **Bowel resection with abdominoperineal resection (APR):** Complete removal of the rectum, and anus resulting in a permanent colostomy. APRs are primarily used for the treatment of a rectal carcinoma situated in the distal (lower) part of the rectum.

6.2 Best practices for Colorectal Cancer Surgery

In addition to the general best practice pathway for cancer surgery defined in Section 4.3 this section includes additional recommendations specifically for patients undergoing colorectal cancer surgery.

The QBP scope includes colon and rectal resections, the specific diagnosis and procedure codes used to define these surgeries can be found in Appendix A.

Phase of Care	Best Practice for Colorectal Surgery
Pre-Surgical Assessment (~4 weeks prior to check-in to check-in)	Consults: <ul style="list-style-type: none"> • Enterostomal Therapy Nurse (ET nurse) for patients planning to have a stoma • Social Work or CCAC if necessary. All patients having a stoma require CCAC on discharge. Patient/Family Teaching: <ul style="list-style-type: none"> • Provide patient with instructions for bowl-prep – as required • Educate the patient on the type of stoma, postoperative goals of care and life with an ostomy • Educate patients on Enhanced Recovery After Surgery (ERAS)
Day of Surgery – Pre-Operative Care Unit (POCU)	Assessments: <ul style="list-style-type: none"> • Recommended bowel preparation for patients with anastomosis below the peritoneal reflection
Day of Surgery – Operating Room	Treatments: <ul style="list-style-type: none"> • Colon/rectal resection performed with appropriate lymph node removal • Ensure all equipment is available, including laparoscopic/robotic equipment if the procedure is being performed
Day of Surgery – Post Anesthetic Care Unit (PACU - Day 0)	Medication: <ul style="list-style-type: none"> • Avoid NSAIDS in patients having enteric anastomosis
Post-operative Surgery: Day 1+ onward (day after operating room or after PACU for day surgery patients)	Assessments: <ul style="list-style-type: none"> • Special care for ostomy patients <ul style="list-style-type: none"> • Pouch emptying • Pouch changes • Ordering supplies Treatment: <ul style="list-style-type: none"> • Removal of foley catheter within 24 hours for colon surgery • Removal of foley catheter within 72 hours for rectal surgery Nutrition: <ul style="list-style-type: none"> • Chew gum for 5 minutes 3 times a day to get the digestive system working

Relevant Guidelines:

- Best Practice in Surgery: Enhance Recovery After Surgery (ERAS) for General Surgery (<http://www.bestpracticeinsurgery.ca/guidelines/general-surgery>)
- Cancer Care Ontario: Optimization of Preoperative Assessment in Patients Diagnosed with Rectal Cancer 17-8 EBS: January 20, 2014 (<https://www.cancercareontario.ca/en/guidelines-advice/types-of-cancer/2241>)

- *Cancer Care Ontario*: Optimization of Surgical and Pathological Quality Performance in Radical Surgery for Colon and Rectal Cancer: Margins and Lymph Nodes
17-4 EBS: April 2008 (<https://www.cancercareontario.ca/en/guidelines-advice/types-of-cancer/566>)
- *Cancer Care Ontario*: Special Report: Multidisciplinary Cancer Conferences (MCC) June 2006 (<https://www.cancercareontario.ca/en/guidelines-advice/types-of-cancer/286>)

7.0 Genitourinary (GU) Cancer Surgery (Non-Prostate)

7.1 Overview

Genitourinary cancers affect organs of the reproductive and urinary systems. This includes the prostate (see section 4.0), bladder, kidneys, penis, testicles, ureter and renal pelvis, and urethra.

- **Partial or total (radical) cystectomy** removes all or part of the bladder for muscle invasive bladder cancer. Partial cystectomy can be performed as an open or laparoscopic procedure.
- **Nephrectomy** is surgery to remove the kidney containing cancer. Both partial and total (radical) nephrectomy can be performed as an open or laparoscopic procedure.
- **Penectomy** is the most common treatment for penile cancer. Removal of the end of the penis is called partial penectomy and removal of the entire penis is called total penectomy.
- **Orchiectomy** surgically removes the testicle(s) and is usually the first treatment for all testicular cancers. Radical (or total) orchiectomy is the standard of care for the treatment of testicular cancer. However, partial orchiectomy may be performed under certain circumstances.
- **Nephroureterectomy** removes the entire kidney, ureter and bladder cuff. Segmental resection removes the section of the ureter that contains the tumour. Surgery is the primary treatment for ureter cancer and can be performed as an open or laparoscopic procedure.

7.2 Best practices for Genitourinary Cancer Surgery

In addition to the the general best practice pathway for cancer surgery defined in Section 4.3 this section includes additional recommendations specifically for patients undergoing Genitourinary cancer surgery.

As a number of procedures are included in this disease site, the best practice recommendations are separated into several groups based on procedure type:

- 1) Bladder Cancer Surgery: Cystectomy (Partial & Total)
- 2) Kidney Cancer Surgery: Nephrectomy (Partial & Radical)
- 3) Testis Cancer Surgery: Orchiectomy
- 4) Upper Tract Urothelial Cancer (UTUC) Surgery (Ureter/Renal Pelvis)
- 5) Penile and Urethral Cancer Surgery

The QBP scope includes a number of genitourinary surgical procedures, the specific diagnosis and procedure codes used to define these surgeries can be found in Appendix A.

Phase of Care	Cystectomy (Bladder) Partial & Total	Nephrectomy (Kidney) Partial & Radical	UTUC Cancer Surgery (Ureter/Renal Pelvis)	Orchiectomy (Testis)	Penile & Urethral Cancer Surgery
Pre-Surgical Assessment (~4 weeks prior to check-in to check-in)	Tests: <ul style="list-style-type: none"> Endoscopic visualization of tumour location – as required Consults: <ul style="list-style-type: none"> Enterostomal Therapy Nurse (ET nurse) for patients planning to have a stoma Patient/Family Teaching: <ul style="list-style-type: none"> Educate the patient on the type of stoma, postoperative goals of care and life with an ostomy – as required 	Tests: <ul style="list-style-type: none"> When tumour is a small renal mass, biopsy before surgery may be considered for patients in whom results might change management 	Tests: <ul style="list-style-type: none"> Cystoscopy Ureteroscopy – as required Endoscopic visualization of tumour location – as required 	Timing: <ul style="list-style-type: none"> Orchiectomy for suspicion of testicular cancer should be done within 1-2 weeks of decision to operate. However, orchiectomy is often done as an emergent case, in which assessment can be done by the team immediately pre-operatively or post-operatively. Tests: <ul style="list-style-type: none"> Serum tumour markers performed pre-operatively Consults: <ul style="list-style-type: none"> Sperm banking should be offered to all patients with appropriate counselling 	
Day of Surgery – Pre-Operative Care Unit (POCU)					
Day of Surgery – Operating Room	Treatments: <ul style="list-style-type: none"> Ensure all equipment is available, including stents Partial or radical cystectomy Creation of diversion/ neobladder/ileoconduit Lymph node dissection – <i>unless contraindicated</i> 	Treatments: <ul style="list-style-type: none"> Partial or radical nephrectomy 	Treatments: <ul style="list-style-type: none"> Radical nephron-ureterectomy or distal ureterectomy, depending on disease location 	Treatments: <ul style="list-style-type: none"> Orchiectomy 	Treatments: <ul style="list-style-type: none"> Partial or radical penectomy Lymph node dissection – <i>as required</i>

Day of Surgery – Post Anesthetic Care Unit (PACU - Day 0)	Medication: <ul style="list-style-type: none"> • Anticoagulation medication 	-	-	-	-
Post-operative Surgery: Day 1+ onward (day after operating room or after PACU for day surgery patients)	Medication: <ul style="list-style-type: none"> • Anticoagulation medication 	-	-	-	-

Relevant Guidelines

- *Cancer Care Ontario*: Special Report: Multidisciplinary Cancer Conferences (MCC) June 2006 (<https://www.cancercareontario.ca/en/guidelines-advice/types-of-cancer/286>)
- *Cancer Care Ontario*: Bladder Cancer Diagnosis, Treatment and Follow-up Pathway Map (2017) (<https://www.cancercareontario.ca/en/pathway-maps/bladder-cancer>)

8.0 Neuro Oncology Surgery

8.1 Overview

Neuro-oncology includes cancers of the brain and spinal cord which form the central nervous system (CNS).

Surgery is the main treatment for brain and spinal cord tumours and is aimed at removing all or part of the tumour (called a partial or total (radical) excision) without affecting normal brain and spinal cord function.

Surgical treatment for a brain tumour may involve a **craniotomy**, which is the surgical procedure that opens the skull and is the most common surgical approach to treating brain tumours, as well as excision of part of the brain. To treat spinal tumours a **laminectomy** is often performed, which is the surgical procedure that opens the vertebrae which covers the spinal cord, in order to remove a spinal tumour. If the spine is weakened when part or all of the vertebra is removed, the spine can be stabilized using fixation devices.

8.2 Best practices for Neuro-Oncology Surgery

In addition to the the general best practice pathway for cancer surgery defined in Section 4.3 this section includes additional recommendations specifically for patients undergoing neuro-oncology surgery.

As a number of procedures are included in this disease site, the best practice recommendations are separated into several groups based on procedure type:

The QBP scope includes a number of neurology oncology surgical procedures, the specific diagnosis and procedure codes used to define these surgeries can be found in Appendix A

Phase of Care	Neuro-Spinal	Neuro – Brain	Neuro – Brain
	Intradural & Extradural Spinal Cancer Surgery	Intra-axial brain tumors, Brain metastases, Skull base meningiomas, Other non-malignant oncological brain masses	Sellar and Supra-sellar Tumors/Pathology
Pre-Surgical Assessment (for emergency immediately pre-op or post-op, or 1-2 weeks prior to surgery)	Assessments: <ul style="list-style-type: none"> Neuro spinal assessments Consults: <ul style="list-style-type: none"> Urgent Radiation Oncology consult for patients with extradural metastasis 	Tests: <ul style="list-style-type: none"> MRI for stereotactic navigation Assessments: <ul style="list-style-type: none"> Full neurological exam – as required Medications: <ul style="list-style-type: none"> Note anti-coagulation and antiplatelet agents 	Tests: <ul style="list-style-type: none"> MRI for stereotactic navigation Assessments: <ul style="list-style-type: none"> Visual fields assessment Consults: <ul style="list-style-type: none"> Endocrinology Ophthalmology if concerned for visual changes – as required Patient/Family Teaching: <ul style="list-style-type: none"> Nasal and sinus care education
Day of Surgery – Pre-Operative Care Unit (POCU)	-	-	
Day of Surgery – Operating Room	Treatments: <ul style="list-style-type: none"> Spinal excision, with or without fusion/fixation procedure Urinary catheter for patients with spinal cord compression 	Tests: <ul style="list-style-type: none"> Preoperative stereotactic navigation Treatments: <ul style="list-style-type: none"> Brain excision Electrophysiological monitoring for using somatosensory evoked potentials or electromyography – as required Neuro-pathology availability – if required 	Tests: <ul style="list-style-type: none"> Preoperative stereotactic navigation Treatments: <ul style="list-style-type: none"> Brain excision Electrophysiological monitoring for using somatosensory evoked potentials or electromyography – as required
Day of Surgery – Post Anesthetic Care Unit (PACU - Day 0)	Assessments: <ul style="list-style-type: none"> Neuro spinal assessments Monitor surgical fields for haematoma or bleeding 	Assessments: <ul style="list-style-type: none"> Assess for neurological deficits and need for urgent imaging with CT or MRI Monitor surgical fields for haematoma or bleeding 	Assessments: <ul style="list-style-type: none"> Monitor surgical fields for haematoma or bleeding
Post-operative Surgery: Day 1+ onward (day	Tests:	Tests:	Tests:

<p>after operating room or after PACU for day surgery patients)</p>	<ul style="list-style-type: none"> • Post-operative x-rays for patients who had instrumentation as part of procedure – as required <p>Assessments:</p> <ul style="list-style-type: none"> • Neuro spinal assessments <p>Consults:</p> <ul style="list-style-type: none"> • Radiation Oncology consult for patients with extradural metastasis <p>Discharge Planning:</p> <ul style="list-style-type: none"> • Referral to spinal rehabilitation centre – as required 	<ul style="list-style-type: none"> • Post-operative imaging to assess extent of residual – as required <p>Assessments:</p> <ul style="list-style-type: none"> • Assess safety for swallow/vocal cord protection for skull base tumors <p>Consults:</p> <ul style="list-style-type: none"> • Speech pathologist – as required <p>Discharge Planning:</p> <ul style="list-style-type: none"> • Referral to rehabilitation services – as required 	<ul style="list-style-type: none"> • Endocrine evaluation of all pituitary axes to assess for hypopituitarism is recommended, with IGF-1 when relevant • Monitor for diabetes insipidus <p>Assessments:</p> <ul style="list-style-type: none"> • Monitor for CSF leak • Assessment of visual function <p>Consults:</p> <ul style="list-style-type: none"> • Speech pathologist – as required • Endocrinology • Ophthalmology consult if concerned for visual changes – as required <p>Discharge Planning:</p> <ul style="list-style-type: none"> • Referral to rehabilitation services – as required
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Relevant Guidelines

- *Cancer Care Ontario: Special Report: Multidisciplinary Cancer Conferences (MCC) June 2006* (<https://www.cancercareontario.ca/en/guidelines-advice/types-of-cancer/286>)

9.0 Prostate Cancer Surgery

9.1 Overview

Prostate cancer is the most commonly diagnosed malignancy among Canadian men and is the second largest cause of male cancer deaths in Canada. Nearly 23 600 cases of prostate cancer are diagnosed in Canada and close to 4000 Canadian men die from prostate cancer every year (Prostate Cancer Canada, 2013).

There are numerous treatment options available for men with prostate cancer based on the risk and grade of the cancer and patient preference. Active surveillance, which consists of regular monitoring for signs of disease progression, is a common treatment for low-grade prostate cancers that are slow growing and may not require a surgical procedure. Additional treatments include radiation therapy as well as hormone therapy, which stops testosterone from being released to the prostate gland to aid in the fight against cancer. Surgery for the removal of the prostate gland and surrounding tissue, known as a radical prostatectomy, is another available treatment for patients with prostate cancer.

There are four surgical approaches used for a Radical Prostatectomy.

- An **open perineal** approach is an approach for a radical prostatectomy whereby the surgeon makes a primary incision through the perineum and carries out the operation through the incision. The procedure includes the removal of the entire prostate along with the seminal vesicles.
- An **open retropubic** approach is an approach for radical prostatectomy whereby the surgeon makes a primary incision through the pubic area and carries out the operation through the incision. This process includes the removal of the entire prostate as well as the seminal vesicles.
- A **laparoscopic** approach for a radical prostatectomy is a “minimal access approach” by which small incisions are made in the abdomen and a video camera is inserted to the view the prostate while the surgeon operates surgical instruments to remove the prostate gland and seminal vesicles.
- A **robotic-assisted radical prostatectomy** is similar to the laparoscopic approach. Similar to the laparoscopic approach small incisions are made in the abdomen to allow for insertion of the robotic arms and video camera. The surgeon manipulates surgical tools robotically allowing removal of the prostate gland.

9.2 Best practices for Prostate Cancer Surgery

In addition to the the general best practice pathway for cancer surgery defined in Section 4.3 this section includes additional recommendations specifically for patients undergoing a radical prostatectomy.

The QBP scope includes radical prostatectomies, the specific diagnosis and procedure codes used to define prostate surgery can be found in Appendix A.

Phase of Care	Best Practice for Radical Prostatectomy
Pre-Surgical Assessment (~4 weeks prior to check-in to check-in)	
Day of Surgery – Pre-Operative Care Unit (POCU)	Assessments: <ul style="list-style-type: none"> • Bowel preparation – if required
Day of Surgery – Operating Room	Treatments: <ul style="list-style-type: none"> • Radical prostatectomy and pelvic lymph node dissection (if necessary) performed • Ensure laparoscopic/robotic equipment available if the procedure is being performed
Day of Surgery – Post Anesthetic Care Unit (PACU - Day 0)	Medication: <ul style="list-style-type: none"> • Medication for bladder spasms
Post-operative Surgery: Day 1+ onward (day after OR or after PACU for day surgery patients)	Consults: <ul style="list-style-type: none"> • Referral for physiotherapy for pelvic floor rehabilitation

Relevant Guidelines:

- *Cancer Care Ontario*: Guideline for Optimization of Surgical and Pathological Quality Performance in Radical Prostatectomy in Prostate Cancer Management. 17-3 EBS: September 2008 (<https://www.cancercareontario.ca/en/guidelines-advice/types-of-cancer/556>)
- *Cancer Care Ontario*: Prostate Cancer Pathway Maps (<https://www.cancercareontario.ca/en/pathway-maps/prostate-cancer>)
- *Cancer Care Ontario*: Special Report: Multidisciplinary Cancer Conferences (MCC). June 2006 (<https://www.cancercareontario.ca/en/guidelines-advice/types-of-cancer/286>)

10.0 Thyroid Cancer Surgery

10.1 Overview

Thyroidectomy is performed for the treatment of thyroid cancer and also as a diagnostic procedure for high risk thyroid nodules. Thyroid cancer is a common cancer and with appropriate treatment, the long-term survival rates are generally excellent. Surgery is the main treatment for thyroid cancer, except for certain anaplastic thyroid cancers. In some circumstances, additional treatments including radioactive iodine ablation, thyroid hormone replacement, external beam radiation, chemotherapy and targeted therapy may be recommended.

The main types of thyroid cancer surgery are:

1. **Partial Thyroidectomy:** Partial thyroidectomy procedures can include removal of a single lobe of the thyroid gland called a 'hemithyroidectomy' or 'lobectomy'. Other partial thyroidectomy procedures can include a 'subtotal thyroidectomy' which includes a lobe and thyroid isthmus and the medial portion of the contralateral lobe. Partial thyroidectomy procedures are sometimes necessary as diagnostic procedures where a needle biopsy is not diagnostic or equivocal.
2. **Total Thyroidectomy:** The removal of the entire thyroid gland.

In conjunction with the thyroidectomy procedure, removal of adjacent lymph nodes, a lymphadenectomy (neck dissection) may be performed if there is the possibility that cancer has spread to the lymph nodes in the neck. There are two types of neck dissections to remove the lymph nodes:

- **Central Compartment Neck Dissection:** The removal of lymph nodes located around the thyroid gland. This procedure is usually performed if the lymph nodes are known to contain cancer, or there is a high suspicion that they contain cancer.
- **Lateral Neck Dissection:** The removal of lymph nodes located in the lateral neck. This procedure is performed if the lymph nodes are known to contain cancer.

10.2 Best practices for Thyroid Cancer Surgery

In addition to the the general best practice pathway for cancer surgery defined in Section 4.3 this section includes additional recommendations specifically for patients undergoing thyroid cancer surgery.

The QBP scope includes partial and total thyroidectomies, the specific diagnosis and procedure codes used to define these surgeries can be found in Appendix A

Phase of Care	Best Practice for Thyroidectomy
Pre-Surgical Assessment (~4 weeks prior to check-in to check-in)	Tests: <ul style="list-style-type: none"> • Pre-operative laryngeal exam should be performed on all patients undergoing thyroid surgery who are at high risk for nerve injury (e.g. totally thyroidectomy patients, pre-operative voice abnormalities, history of cervical or upper chest surgery, thyroid cancer with known posterior extension or extensive cervical node metastases) Assessments: <ul style="list-style-type: none"> • Confirm TSH and/or calcium levels • Vitamin D level testing can be considered for patients at risk of deficiency Medications: <ul style="list-style-type: none"> • Prophylactic calcium and vitamin D supplementation can be considered
Day of Surgery – Pre-Operative Care Unit (POCU)	
Day of Surgery – Operating Room	Treatments: <ul style="list-style-type: none"> • Thyroidectomy (partial or total) and neck dissection (if necessary) performed • Assess for parathyroid function and recurrent laryngeal nerve function
Day of Surgery – Post Anesthetic Care Unit (PACU - Day 0)	Tests: <ul style="list-style-type: none"> • For total thyroidectomy patients, post-op calcium profile either via serum calcium or PTH monitoring (with results available in a timely manner) Assessments: <ul style="list-style-type: none"> • Ensure trach tray and suture/staple remover kit is readily available Consults: <ul style="list-style-type: none"> • For total thyroidectomy patients, endocrinology as required Medication: <ul style="list-style-type: none"> • For total thyroidectomy patients, as clinically indicated: <ul style="list-style-type: none"> ○ Calcium supplementation ○ Vitamin D supplementation Activity: <ul style="list-style-type: none"> • No active neck exercises
Post-operative Surgery: Day 1+ onward (day after operating)	Tests: <ul style="list-style-type: none"> • For total thyroidectomy patients, post-op calcium monitoring either via calcium or PTH levels (with results available in a timely manner)

room or after
PACU for day
surgery
patients)

Medication:

- Thyroid replacement for total thyroidectomy patients
- Thyroid replacement if clinically indicated for partial thyroidectomy patients
- For total thyroidectomy patients, as clinically indicated:
 - Calcium supplementation
 - Vitamin D supplementation

Activity:

- No active neck exercises

Relevant Guidelines

- *Cancer Care Ontario*: Special Report: Multidisciplinary Cancer Conferences (MCC) June 2006 (<https://www.cancercareontario.ca/en/guidelines-advice/types-of-cancer/286>)
- *Cancer Care Ontario* Thyroid Cancer Guideline: An Endorsement of the 2015 American Thyroid Association Management Guidelines for Adult Patients with Thyroid Nodules and Differentiated Thyroid Cancer (<https://www.cancercareontario.ca/en/guidelines-advice/types-of-cancer/37781>)
- *Cancer Care Ontario*. Thyroid Pathway Maps (<https://www.cancercareontario.ca/en/pathway-maps/thyroid-cancer>)
- Laryngeal examination in thyroid and parathyroid surgery: An American Head and Neck Society consensus statement: AHNS Consensus Statement

11.0 Additional Disease Sites

In FY2018/2019, 5 additional disease sites for cancer surgery will transition to QBP funding. These disease sites are:

- 1) **Lung-DC (designated centre):** These procedures should only be performed in a Thoracic Surgery Designated Centre and includes procedures such as lung resection (e.g. pneumonectomy, lobectomy, etc.) as well excision of the trachea/bronchus and thoracic lymph nodes.
- 2) **Esophagus-DC (designated centre):** These procedures should only be performed in a Thoracic Surgery Designated Centre and include esophageal resections.
- 3) **Thorax-other:** These are procedures that can be performed at any hospital and includes procedures on structures in the thoracic cavity aside from lung and esophageal resections.
- 4) **Liver-DC (designated centre):** These procedures should only be performed in a HPB Designated Centre and include liver and bile duct resections.
- 5) **Pancreas-DC (designated centre):** These are procedures that should only be performed in a HPB Designated Centre and include pancreas resections.

In-scope Procedures:

- The diagnosis and procedure codes for each additional disease site are defined in Appendix A.

Quality Elements (Best Practices, Length of Stays and Quality Indicators):

- The general Cancer Surgery Best Practice Pathway is applicable to these disease sites.
- Working groups will be assembled to define disease-specific best practice, length of stay recommendations and quality indicators which will be available for FY2019/2020 implementation.

Relevant Guidelines

- *Cancer Care Ontario*: Special Report: Multidisciplinary Cancer Conferences (MCC) June 2006
- *Cancer Care Ontario*: The Role of Liver Resection in Colorectal Cancer Metastases 17-7 EBS: June 2012
- *Cancer Care Ontario*: Invasive Mediastinal Staging of Non-small Cell Lung Cancer 17-6 EBS: October 2010
- *Cancer Care Ontario*: Hepatic, Pancreatic, and Biliary Tract (HPB) Surgical Oncology Standards 17-2 (Version 2) Standards Report: June 2015
- *Cancer Care Ontario*: Thoracic Surgical Oncology Standards 17-1 (Version 2) Standards Report: March 2015

12.0 Length of Stay Recommendations

A length of stay (LOS) recommendation(s) is required for each disease site and/or procedure type included in the Cancer Surgery QBP. The following recommendations are based on analysis of empirical data and expert consensus: analysis was conducted for the in-scope patient cohort over the most recent fiscal years and the data was then reviewed by clinical experts to ensure it was clinically valid. The LOS recommendation is for the typical patient seen, and it is recognized that there may be outliers due to patient comorbidities or other factors.



NOTE: The LOS of stay recommendation is for inpatient activity. Depending on the disease site there may be a large proportion of procedures that are performed as day surgery. The proportion of patients treated as day surgery versus in-patient will be monitored to assess for practice change as a result of QBP implementation

LOS Recommendations:

Table 3:

Disease	Procedure Type		LOS	Current Activity (median LOS)	
			Recommendation*	FY15/16	FY16/17
Prostate	Open Perineal		3 days	2 days	2 days
	Open Retropubic		3 days	2 days	3 days
	Robotic		2 days	1 day	1 day
	Laparoscopic		2 days	2 days	1 day
Colon	Elective	Laparoscopic	4 days	4 days	4 days
		Open	6 days	6 days	6 days
	Emergency	Laparoscopic	9 days	9 days	9 days
		Open	12 days	11 days	11 days
Rectum	Elective	Laparoscopic	4 days	4 days	4 days
		Open	7 days	7 days	6 days
	Emergency	Laparoscopic	6 days	8 days	7.5 days
		Open	11 days	11 days	12 days
Thyroid	Partial Thyroidectomy		1 days	1 day	1 day
	Total Thyroidectomy		2 days	1 day	1 day
	Total Thyroidectomy + HNK procedure**		3 days	2 days	2 days
Breast	Breast surgery without reconstruction (mastectomy, lumpectomy, ALND, SLNB)		1 day	1 day	1 day
	Reconstruction (immediate and delayed) – Implants only		1 day	1 day	1 day
	Reconstruction (immediate and delayed) – Non-microsurgical tissue (+/- implants)		3 days	2 days	2 days
	Reconstruction (immediate and delayed) –Microsurgical tissue (+/- implants)		4 days	4 days	4 days

Breast (Prophylactic Mastectomy)	Mastectomy without reconstruction		1 day	1 day	1 day
	Mastectomy with immediate reconstruction – Implants only		1 day	1 day	1 day
	Mastectomy with immediate reconstruction - Non-microsurgical tissue (+/- implants)		3 days	2.5 days	2 days
	Mastectomy with immediate reconstruction – Microsurgical tissue (+/- implants)		4 days	4 days	4 days
Genitourinary	Cystectomy (Bladder)	Partial Laparoscopic Cystectomy	1 day	1 day	1 day
		Partial Open Cystectomy	4 days	4 days	3.5 days
		Total Cystectomy	9 days	9 days	9 days
	Nephrectomy (Kidney)	Laparoscopic Nephrectomy (partial & total)	3 days	3 days	3 days
		Partial Open Nephrectomy	4 days	4 days	4 days
		Total Open Nephrectomy	5 days	5 days	5 days
	Orchiectomy (Testes)	Partial Orchiectomy	1 day	1 day	2 days
		Total Orchiectomy	1 day	2 days	1 day
		Radical Orchiectomy	1 day	1 day	1 day
	UTUC Surgery (Ureter/Renal Pelvis)	Partial & Total Excision	4 days	4 days	4 days
	Penectomy (Penis)	Partial Penectomy	1 day	1 day	1 day
		Total Penectomy	3 days	3 days	5 days
	Urethra	Partial & Total Excision	2 days	2 days	2 days
Neuro- Oncology	Brain Surgery		5 days	5 days	5 days
	Spinal Surgery (including fusion/fixation procedures performed at the same time as an excision)		8 days	8 days	8 days

*LOS recommendations are based on input from the Clinical Expert QBP Working Group for each disease site during the initial implementation year.

**HNK procedure refers to any procedure classified as a HNK procedure in CSA (HNK-R or HNK-NR) that appears in the secondary intervention field. In the majority of these cases the HNK procedure is a neck dissection.

13.0 Implementation of Best Practices

The Cancer Surgery QBP funding model is based on the following principles, ensuring the implementation of best practices and quality improvement:

- Align funding framework development with Ontario's Excellent Care for All Act & Patient-Based Payment policy
- Address in-hospital care phase initially with expansion to the pre-treatment and follow up care phases
- Transition on a disease site basis.
- Use lessons learned from the Cancer Surgery Agreement (CSA) process (allocation, re-allocation and reconciliation) and apply them to QBP
- Ensure clinical best practices remain current with existing evidence
- Continue to maintain linking the implementation of clinical guidelines and organization guidelines similar to the Schedule B requirements within the Cancer Surgery Agreement.
- Ensure model development process is transparent, multi-disciplinary and collaborative
- Promote high quality care close to home as appropriate
- Promote timely access to care
- Support decreased practice variation
- Promote value for money and improve efficiency (i.e., track and evaluate money spent by outcomes achieved)
- Improve outcome measurement and accountability for reported outcomes
- Balance implementation of funding framework with financial risk to organizations
- Ensure that ongoing governance structure (including clinical oversight) is supported by transparent dispute resolution processes for Cancer Surgery QBP
- Establish ongoing monitoring, reporting and evaluation of processes/quality indicators/outcomes
- Establish recognized and transparent performance management cycle and funding agreements
- Respond to and incorporate new evidence and support new models of care

13.1 How does Cancer Surgery as a QBP align with clinical practice?

The implementation of previous QBPs, and evidence informed practices have resulted in improved patient experiences, better outcomes and a streamlined length of stay for patients. QBPs align with clinical practice by encouraging the adoption of best practices in order to maximize system capacity

and use of available resources. This process will result in improvements in patient satisfaction and improved quality of care.

13.2 What are the implications for clinicians?

The changes associated with the QBPs focus on identifying and implementing evidence-informed practice driven by clinical consensus. Clinicians will be tasked with identifying within their own expertise best practice protocols and identifying where there are variances from such practice. Collaboration with hospital administration will assist the clinicians in identifying the challenges within the service, as well as opportunities and the feasibility for changes to the best practice.

Clinicians will continue to play an essential role in guiding hospitals to meet the needs of their patients and ensuring the highest quality care is provided for all patients.

At this time, physician payment models and OHIP fee schedules, as they relate to QBPs will remain unchanged. Physicians currently working under fee-for-service will continue to submit claims to OHIP for consultations, treatment and follow-up.

13.3 Will this change current practice?

The cancer surgery procedure-based funding framework may create change in current practice for some clinicians and hospitals in Ontario.

14.0 Service capacity planning

The service capacity planning for Cancer Surgery QBP will build on existing processes that are in place with the Cancer Surgery Agreements (CSA). Hospitals will be required to maintain their volumes; therefore, resulting in minimal impact or change in service capacity.

15.0 Performance evaluation and feedback

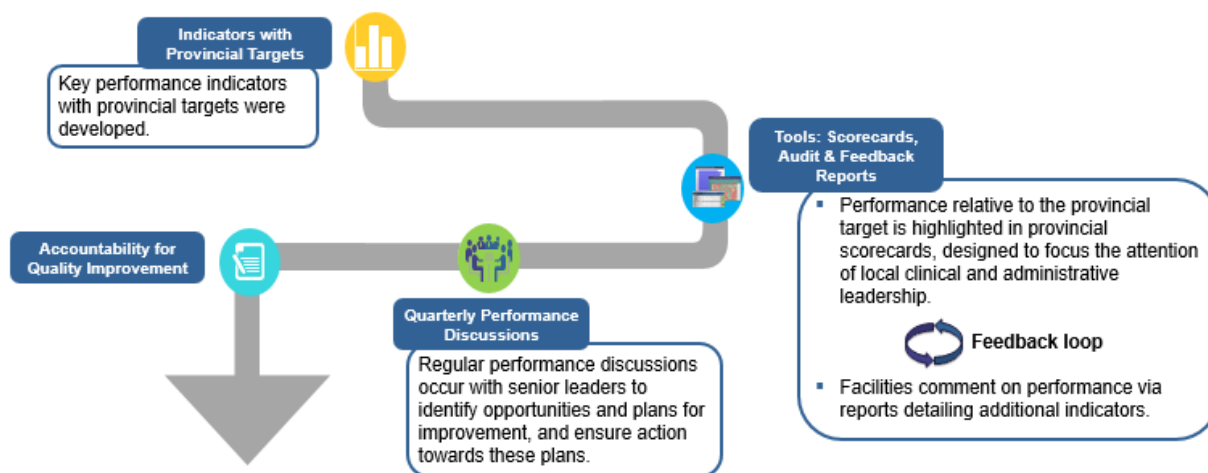
In order to ensure high quality care, Cancer Care Ontario employs a systematic approach to performance management, whereby facilities are held accountable to achieving provincial quality targets.

A regionalized approach is taken to the governance of cancer services, with each of the 14 regional programs being led by a Regional Vice President and a team of clinical leaders. These leaders work with facilities and clinicians throughout their regions to implement provincial quality standards and programs.

Provincial targets are set for service quality and access, and a robust performance management framework is applied by Cancer Care Ontario to drive and support improvement across the province.

Cancer Surgery QBP quality indicators and performance will be incorporated into this process.

Figure 3: Cancer Care Ontario's Performance Management Process



16.0 Cancer Surgery Quality Indicators

In introducing the QBPs the Ministry has a strong interest in:

- Supporting monitoring and evaluation of the impact (intended and unintended) of the introduction of QBPs
- Providing benchmark and performance management information for clinicians and administrators that will enable mutual learning and promote on-going quality improvement

There was recognition that reporting on a few system-level indicators alone would not be sufficient to meet the Ministry's aim of informing and enabling quality improvement initiatives at the provider-level. Therefore, measures meaningful to hospitals and clinicians that are interpretable and have demonstrable value in improving the quality of care provided to patients are also of utmost importance.

The scorecard is based on the following guiding principles:

- **Relevance** – the scorecard should accurately measure the response of the system to introducing QBPs
- **Importance** – to facilitate improvement, the indicators should be meaningful for all potential stakeholders (patients, clinicians, administrators, LHINs and the ministry)
- **Alignment** – the scorecard should align with other indicator-related initiatives where appropriate
- **Evidence** – the indicators in the integrated scorecard need to be scientifically sound or at least measure what is intended and accepted by the respective community (clinicians, administrators and/or policy-decision makers)

CCO will incorporate quality indicators into the performance management process/cycle at the regional and hospital level.

To develop quality indicators the program scanned the literature to determine which indicators are used in other jurisdictions and polled the disease working groups for clinical expert input into additional indicators. Table 4 outlines the proposed indicators by disease site as recommended by the working groups. Some indicators may or may not be developed/reported.

There are two categories of cancer surgery QBP quality indicators:

- 1) Common Cancer Surgery indicators which are evaluated for each cancer surgery disease site. Examples include: reoperation rates and perioperative mortality rates.
- 2) Disease-site specific indicators, where the measure has clinical relevance to a certain disease site but may not be clinically relevant in other disease sites, such as positive margin rates.

Working Groups have been assembled and reviewed disease-site specific indicators for colon, rectal, thyroid, breast, genitourinary and neuro-oncology. These results are summarized in table 4.

Cancer Surgery indicators will be reported for each of the implemented QBP disease sites, although not all indicators outlined below may be developed/reported.

Table 4:

Quality Domain	What is being measured?	Common Cancer Surgery Indicators	Prostate Cancer	Colorectal Cancer	Thyroid Cancer*	Breast Cancer**
Effectiveness	What are the results of care received by patients and do the results vary across providers that cannot be explained by population characteristics as well as is care provided without harm?	<ul style="list-style-type: none"> - Re-operation rate within 30 days following resection - 30 and 90 day mortality rate following resection 	-	-	-	-
Appropriateness	Is patient care being provided according to scientific knowledge and in a way that avoids overuse, underuse or misuse?	<ul style="list-style-type: none"> - Discipline participation in a high-quality Multidisciplinary Cancer Conference (MCC) 	<ul style="list-style-type: none"> - Proportion of patients that receive a radiation oncologist consult or discussion at a MCC prior to surgery - Proportion of patients with positive pT2 margins after radical prostatectomy 	<ul style="list-style-type: none"> - Proportion of patients with positive circumferential margins after rectal resection - Proportion of colon resection patients with 12 or more lymph node retrieved - Proportion of patients that receive a MRI and CT before rectal cancer surgery 	<ul style="list-style-type: none"> - Proportion of patients that received a partial thyroidectomy for low risk disease - Proportion of patients found to have benign disease following thyroidectomy - Proportion of patients with adequate lymph node retrieval following central neck dissection 	<ul style="list-style-type: none"> - Proportion of patients that receive appropriate pre-operative imaging of the breast - Proportion of patients staged that receive appropriate pre-operative tissue diagnosis - Proportion of patients with positive margins after breast cancer surgery (lumpectomy and mastectomy)
Integration	Are all parts of the health system organized, connected and work with another to provide high quality care?	<ul style="list-style-type: none"> - 30 day unplanned visit rate following resection (readmission or ER visit) 	<ul style="list-style-type: none"> - Proportion of patients with positive margins and/or a post prostatectomy rising PSA >0.1ng/mL that had a radiation oncology consult post-surgery 	-	-	-

Quality Domain	What is being measured?	Common Cancer Surgery Indicators	Prostate Cancer	Colorectal Cancer	Thyroid Cancer*	Breast Cancer**
Efficiency	Does the system make best use of available resources to yield maximum benefit ensuring that the system is sustainable for the long term?	- Average length of stay following resection	-	-	-	-
Access	Are those in need of care able to access services when needed?	- Proportion of patients that received surgery within the appropriate Wait 2 priority target	-	-	-	- Proportion of mastectomy patients that receive reconstruction within 2 years post mastectomy
Patient-Centeredness	Is the patient/user at the center of the care delivery and is there respect for and involvement of patients' values, preferences and expressed needs in the care they receive? (TBC)	-	-	-	-	-

NOTES:

*The Thyroid Cancer Surgery QBP Working Group felt that measurement of an indicator specific to medullary cancer would be of limited value due to low volumes.

**An indicator specific to prophylactic mastectomy may be determined at a later date

17.0 Support for Change

Cancer Care Ontario (CCO) will continue to work with various stakeholders across the province to educate all multidisciplinary teams impacted by the new Cancer Surgery Funding Model. Currently, CCO works with numerous clinical specialists that will provide the necessary support for clinical knowledge transfer and exchange (KTE).

The Ministry, in collaboration with its partners, will deploy a number of field supports to support adoption of the funding policy. These supports include:

- Committed clinical engagement with representation from cross-sectoral health sector leadership and clinicians to champion change through the development of standards of care and the development of evidence-informed patient clinical pathways for the QBPs.
- Dedicated multidisciplinary clinical expert group that seek clearly defined purposes, structures, processes and tools which are fundamental for helping to navigate the course of change.
- Strengthened relationships with Ministry partners and supporting agencies to seek input on the development and implementation of QBP policy, disseminate quality improvement tools, and support service capacity planning.
- Alignment with quality levers such as the Quality Improvement Plans (QIPs). QIPs strengthen the linkage between quality and funding and facilitate communication between the hospital board, administration, providers and public on the hospitals' plans for quality improvement and enhancement of patient-centered care.
- Deployment of a Provincial Scale Applied Learning Strategy known as IDEAS (Improving the Delivery of Excellence across Sectors). IDEAS is Ontario's investment in field-driven capacity building for improvement. Its mission is to help build a high-performing health system by training a cadre of health system change agents that can support an approach to improvement of quality and value in Ontario.

We hope that these supports, including this Clinical Handbook, will help facilitate a sustainable dialogue between hospital administration, clinicians, and staff on the underlying evidence guiding QBP implementation. The field supports are intended to complement the quality improvement processes currently underway in your organization.

18.0 Frequently Asked Questions

There have been no frequently asked questions identified to date.

19.0 Membership

Please note the following tables outlines the members at the date that the group was first engaged, and membership changes may be made after first engagement.

The following table outlines the members of the Cancer Surgery QBP Steering Committee:
Current membership as of January 2018

CANCER SURGERY QBP STEERING COMMITTEE	
NAME	TITLE & ORGANIZATION
Dr. Robin McLeod	Vice President, Clinical Programs and Quality Improvement
Garth Matheson	Vice President, Regional Programs and Planning
Dr Jonathan Irish	Provincial Head, Surgical Oncology Program, Cancer Care Ontario
Dr Alice Wei	Clinical Lead, Quality Improvement & Knowledge Transfer, Surgical Oncology Program, Cancer Care Ontario
Jonathan Wiersma	Director, Funding Unit, Cancer Care Ontario
Elaine Meertens	Director, Clinical Programs – Diagnosis & Treatment, Cancer Care Ontario
Vicky Simanovski	Director, Regional Programs, Cancer Care Ontario
Amber Hunter	Manager, Surgical Oncology Program, Cancer Care Ontario
Julia Monakova	Manager, Funding Unit, Cancer Care Ontario
Leigh McKnight	Program Lead, Surgical Oncology Program, Cancer Care Ontario
Pierre Iorio	Methodologist, Funding Unit, Cancer Care Ontario

The following table outlines the members of the Cancer Surgery QBP Advisory Committee:
Membership date: October 2013

* *Cancer Care Ontario representative*

CANCER SURGERY QBP ADVISORY COMMITTEE (2015)			
NAME	TITLE & ORGANIZATION	NAME	TITLE & ORGANIZATION
Dr Jonathan Irish*	Provincial Head, Surgical Oncology Program	Faith Forbes	Finance & Manager of Redevelopment, HBAM & QBP, Humber River Hospital
Dr Alice Wei*	Clinical Lead, Quality Improvement & Knowledge Transfer	Dr. Stan Feinberg	Medical Director of Cancer Care & Ambulatory Care, North York General Hospital
Garth Matheson*	Vice- President, Planning & Regional Program	Leslie Motz	Senior Director, Surgery, Pharmacy, Ambulatory Clinics, OTN, Lakeridge Health
Irene Blais*	Director, Funding Unit,	Dr. John Dickie	Head, Section of Thoracic Surgery & Chief, Department of Surgery, Lakeridge Health
Elaine Meertens*	Director, Regional Programs	Brenda Carter	Regional Vice President, South East LHIN, Kingston General Hospital

Saul Melamed*	Director, Clinical Programs & Quality Initiative,	Nathalie Cadieux	Corporate Financial Controller, The Ottawa Hospital
Amber Hunter*	Manager, Surgical Oncology Program,	Dr. Sudir Sundaresan	Chief, Division of Thoracic Surgery, The Ottawa Hospital
Leigh McKnight*	Program Lead, Surgical Oncology Program	Dr. Mike Anderson	Regional Surgical Lead, Simcoe Muskoka Regional Cancer Centre
Sukaina Sheraly*	Project Lead, Surgical Oncology Program	Tiz Silveri	Vice President of Clinical Services, North Bay Regional Health Centre
Julia Monakova*	Manager, Funding Unit	Dr. Jeff Kolbasnik	Chief, Department of Surgery, Halton Healthcare Services and Chair, General Surgery Section, Ontario Medical Association
Dr. Aaron Pollet*	Provincial Head, Pathology & Laboratory Medicine	Anubhu Prashad	Senior Policy Consultant, MOHLTC
Jeff Booth	Director, Windsor Regional Cancer Centre	Thomas Smith	Program Manager, Negotiations & Accountability Management Division, Provincial Programs Branch, MOHLTC
Silvie Crawford	Vice-President, Patient Centred Care, London Health Sciences	Marnie Escaf	Senior Vice- President & Executive Lead, PM Cancer Program, University Health Network
Dr. Stephen Pautler	Regional Surgical Lead, St. Joseph's Hospital- London	Dr. Andy Smith	Executive Vice President & Chief Medical Officer, Odette Cancer Centre
Judy Burns	Regional Vice-President, Grand River Regional Cancer Center	Filomena Travossos	Manager, Decision Support, Trillium Health Partners
Dr. Ved Tandan	Regional Surgical Lead, St. Joseph's Hospital- Hamilton	Kim Alvarado	Director, Surgical Oncology, Orthopedics & Critical Care, Juravinski Cancer Centre

The following table outlines the members of the Prostate Cancer Surgery Working Group
Membership date: November 2013

PROSTATE CANCER SURGERY WORKING GROUP	
NAME	TITLE & ORGANIZATION
Dr. Rag Goel	Urologist, Windsor Regional Cancer Centre
Dr. Paul Martin	Urologist, Bluewater Health
Dr. Joe Chin	Urologist, London Health Sciences Centre
Dr. Demo Divaris	Regional Pathology Lead, Grand River Hospital & St. Mary's General Hospital
Dr. Bobby Shayegan	Urologist, St. Joseph's Healthcare- Hamilton
Dr. Chris Morash	Urologist, The Ottawa Hospital
Dr. Munir Jamal	Head, Division of Urology, Trillium Health Partners
Dr. Thomas McGowan	Physician Director, Radiation Oncology, Trillium Health Partners
Dr. Rajiv Singal	Urologist, Toronto East General Hospital
Dr. Tony Finelli	Urologist, University Health Network; Disease Pathway Management Genitourinary Cancers Lead, Cancer Care Ontario
Dr. Neil Fleshner	Urologist, University Health Network
Dr. Stephen Pautler	Regional Surgical Lead, St. Joseph's Hospital- London

The following table outlines the members of the Colorectal Cancer Surgery Working Group
Membership date: May 2014

COLORECTAL CANCER SURGERY WORKING GROUP	
NAME	TITLE & ORGANIZATION
Barbara-Anne Maier	Registered Nurse & Clinical Manager, Diagnostic Assessment Programs & Integrated Screening, Grand River Cancer Centre
Dr. Patrick Colquoin	General Surgeon, London Health Sciences Centre
Dr. Cagla Eskicioglu	General Surgeon, St. Joseph's Healthcare
Dr. Jeff Kolbasnik	General Surgeon, Halton Healthcare Services
Dr. William Chu	Radiation Oncologist, Sunnybrook Health Sciences Centre
Dr. Erin Kennedy	General Surgeon, Mount Sinai Hospital; Disease Pathway Management Gastrointestinal Cancers Lead, Cancer Care Ontario
Dr. Stan Feinberg	General Surgeon, North York General Hospital
Pamela Richards	Nurse, Mackenzie Health
Dr. Lynn Mikula	General Surgeon, Peterborough Regional Health Centre
Dr. Janet Van Vlymen	Anesthesiologist, Kingston General Hospital
Dr. Mike Anderson	Regional Surgical Lead, North Simcoe Muskoka
Maureen McGrath	Nurse, The Ottawa Hospital
Dr. Blair MacDonald	Radiologist, The Ottawa Hospital
Dr. Kevin Gagne	Anesthesiologist, North Bay Regional Health Centre
Dr. Bill Harris	General Surgeon, Thunder Bay Regional Health Sciences Centre

The following table outlines the members of the Thyroid Cancer Surgery Working Group
Membership date: February 2015

THYROID CANCER SURGERY WORKING GROUP	
NAME	TITLE & ORGANIZATION
Dr. Linda Tietze	Otolaryngology, Windsor Regional Hospital
Dr. Deric Morrison	Endocrinology, London Health Sciences Centre
Dr. John Yoo	Otolaryngology – Head & Neck Surgery, London Health Sciences Centre
Dr. Patrick Whelan	General Surgery, Markham Stouffville Hospital
Dr. Julia Jones	General Surgery, Lakeridge Health
Dr. Ozgur Mete	Pathology, Lakeridge Health
Laurie Thomas	Nursing, Kingston General Hospital
Dr. Stephanie Johnson	Otolaryngology, The Ottawa Hospital
Dr. Rob Hekkenberg	Otolaryngology, Royal Victoria Hospital
Dr. Pankaj Bhatia	General Surgery, Health Sciences North
Dr. Tom Carr	Nuclear Medicine, Health Sciences North
Dr. Marc Freeman	Nuclear Medicine, Trillium Health Partners

Dr. Kevin Higgins	Otolaryngology – Head & Neck Surgery, Sunnybrook Health Sciences Centre
Dr. Jim Brierley	Radiation Oncology, University Health Network
Dr. Ralph Gilbert	Otolaryngology – Head & Neck Surgery, University Health Network
Dr. Richard Brull	Anesthesiology, University Health Network
Salin Kim	Nursing, University Health Network
Dr. Eric Monteiro	Otolaryngology – Head & Neck Surgery, Mount Sinai Hospital

The following table outlines the members of the Breast Cancer Surgery Working Group
Membership date: February 2015

BREAST CANCER SURGERY WORKING GROUP	
NAME	TITLE & ORGANIZATION
Dr. David Shum	Pathology, Windsor Regional Hospital
Dr. Swati Kulkarni	Medical Oncology, Windsor Regional Hospital
Dr. Muriel Brackstone	General Surgery, London Health Sciences Centre
Dr. Mike Maurice	General Surgery, Grand River Hospital/St. Mary's General Hospital
Dr. Peter Lovrics	General Surgery, St. Joseph's Healthcare
Dr. Anna Kobylecky	General Surgery, Niagara Health System
Dr. Jeff Kolbasnik	General Surgery, Halton Healthcare Services
Dr. Anita Bane	Pathology, Hamilton Health Sciences Centre
Dr. Nancy Down	General Surgery, North York General Hospital
Dr. Elizabeth Hartley	Anesthesiology, Rouge Valley Hospital
Dr. Dragana Pilavdzic	Pathology, Lakeridge Health
Kristina Cruess	Nursing, Quinte Health Care
Dr. Kaes Al-Ali	General Surgery, Northumberland Hills Hospital
Dr. Laurie Wherrett	General Surgery, Lakeridge Health
Dr. Angel Arnaout	General Surgery, The Ottawa Hospital
Dr. Jennifer Macmillan	General Surgery, Muskoka Algonquin Healthcare
Dr. Rachele Paradis	General Surgery, Health Sciences North
Dr. Ted McAlister	General Surgery, Brampton Civic Hospital
Dr. Laura Snell	Plastic Surgery, Sunnybrook Health Sciences Centre
Fatima San Pedro	Nursing, Sunnybrook Health Sciences Centre
Dr. Andrea Eisen	Medical Oncology, Sunnybrook Health Sciences Centre; Disease Pathway Management Breast Cancer Lead, Cancer Care Ontario
Dr. Ralph George	General Surgery, St. Michael's Hospital
Dr. David McCready	General Surgery, University Health Network
Dr. Derek Muradali	Radiology, University Health Network
Janet Papadakos	Nursing, University Health Network
Dr. Toni Zhong	Plastic Surgery, University Health Network

The following table outlines the members of the Genitourinary Cancer Surgery Working Group

Membership date: November 2015

GENITOURINARY CANCER SURGERY WORKING GROUP	
NAME	TITLE & ORGANIZATION
Dr. Kevin Kwan	Urology, Halton Healthcare
Dr. Philippe Violette	Urology, Woodstock Hospital
Janice Koekebakker	Hospital Leadership, Woodstock Hospital
Dr. Munir Jamal	Urology, Trillium Health Partners
Dr. Andrew Feifer	Urology, Trillium Health Partners
Dr. Michael Pianezza	Urology, Health Sciences North
Dr. Joseph Chin	Urology, London Health Sciences Centre
Dr. David Hajek	Urology, North York General Hospital
Dr. Audrey Li	Radiation Oncology, Lakeridge Health
Dr. Edward Woods	Urology, Quinte Health Care
Dr. Girish Kulkarni	Urology, University Health Network
Dr. Suman Chatterjee	Urology, Brampton Civic Hospital
Dr. Chris Morash	Urology, The Ottawa Hospital
Dr. Antonio Finelli	Urology, University Health Network; Disease Pathway Management Genitourinary Cancers Lead, Cancer Care Ontario
Dr. Ian Dayes	Radiation Oncology, Hamilton Health Sciences Centre
Dr. Eric Winquist	Medical Oncology, London Health Sciences Centre
Dr. Ron Sorenson	Urology, Windsor Regional Hospital

The following table outlines the members of the Neuro Oncology Cancer Surgery Working Group

Membership date: January 2017

NEURO ONCOLOGY CANCER SURGERY WORKING GROUP	
NAME	TITLE & ORGANIZATION
Dr. Abdalla Shamisa	Neurosurgery, Windsor Regional Hospital
Dr. Joseph Megyesi	Neurosurgery, London Health Sciences Centre
Dr. John Provias	Neuropathology, Hamilton Health Sciences Centre
Dr. Jeffrey Greenspoon	Radiation Oncology, Hamilton Health Sciences Centre
Dr. Eric Marmor	Neurosurgery, Trillium Health Partners
Dr. Julian Spears	Neurosurgery, St. Michael's Hospital
Dr. Gelareh Zadeh	Neurosurgery, University Health Network
Dr. Warren Mason	Medical Oncology, University Health Network

Nelisha Bhaloo	Nursing Supervisor, Sunnybrook Health Sciences Centre
Dr. Todd Mainprize	Neurosurgery, Sunnybrook Health Sciences Centre
Dr. Chris Wallace	Neurosurgery, Kingston General Hospital
Dr. Gerard Jansen	Neuropathology, The Ottawa Hospital
Dr. Ryan DeMarchi	Neurosurgery, Health Sciences North
Dr James Perry	Neurology, Sunnybrook Health Sciences Centre; Disease Pathway Management Neuro Oncology Cancer Lead, Cancer Care Ontario

Appendix A – In-scope Diagnosis & Procedure Codes

The embedded excel file lists all of the in-scope diagnosis and procedure codes.

NOTE: *This code list does not contain the new version 2018 CIHI codes which will be added following CIHI distribution of updates.*



Clinical Handbook
Appendix - QBP Diagnosis



