

Quality-Based Procedures Clinical Handbook for Cancer Surgery

Ministry of Health and Long-Term Care

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Table of Contents

1.0	Purpose.....	3
2.0	Introduction	3
3.0	Cancer Surgery QBP.....	10
4.0	Prostate Cancer Surgery	15
5.0	Colorectal Cancer Surgery	22
6.0	Implementation of best practices	30
7.0	What does it mean for multi-disciplinary teams?	31
8.0	Service capacity planning.....	32
9.0	Performance evaluation and feedback	33
10.0	Cancer Surgery Quality Indicators	37
11.0	Support for Change	39
12.0	Frequently Asked Questions	40
13.0	Membership	41
	Appendices	43

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

Historically, a large portion of health service providers' funding has been grounded on a base annualized funding (global allocation), which is used to maintain day-to-day operations, such as: staff wages & benefits; overhead costs and service/maintenance contracts and new incremental funding, based on a funding formula, which takes into account demographics and acuity: growth funding targeted at fastest growing communities, hospital type (i.e. small/rural to cover service gaps, academic hospital sites to cover higher cost and acuity).

There needs to be a move to better integrate and align funding mechanisms across sectors to respond to volume and mix of services that meet population need through the pathway of care for patients. By focusing on an enhanced alignment between high quality patient care and funding, reductions in variation in practice across the province can be achieved. The results of such reduction in practice variation facilitate the adoption of best clinical evidence-informed practices, ensuring our patients receive the right care, at the right place and at the right time.

In response to these fiscal challenges, as of April 1, 2012, the Ministry of Health and Long-Term Care (ministry) has implemented Health System Funding Reform (HSFR).

Over the fiscal years 2012/13 to 2014/15, HSFR will shift much of Ontario's health care system funding for hospitals and Community Care Access Centres (CCACs) away from the current global funding allocation towards paying for activity and patient outcomes, to further support quality, efficiency and effectiveness in the health care system.

HSFR is predicated on the tenets of **Ontario's Action Plan for Health Care** and is aligned 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.

HSFR is comprised of three key components:

1. Organizational-Level funding, which will be allocated as base funding using the Health Based Allocation Model (HBAM);
2. Quality-Based Procedure (QBP) funding, which will be allocated for targeted clinical areas based on a "price x volume" approach premised on evidence-based practices and clinical and administrative data; and
3. Global funding approach.

2.1 What are we moving towards?

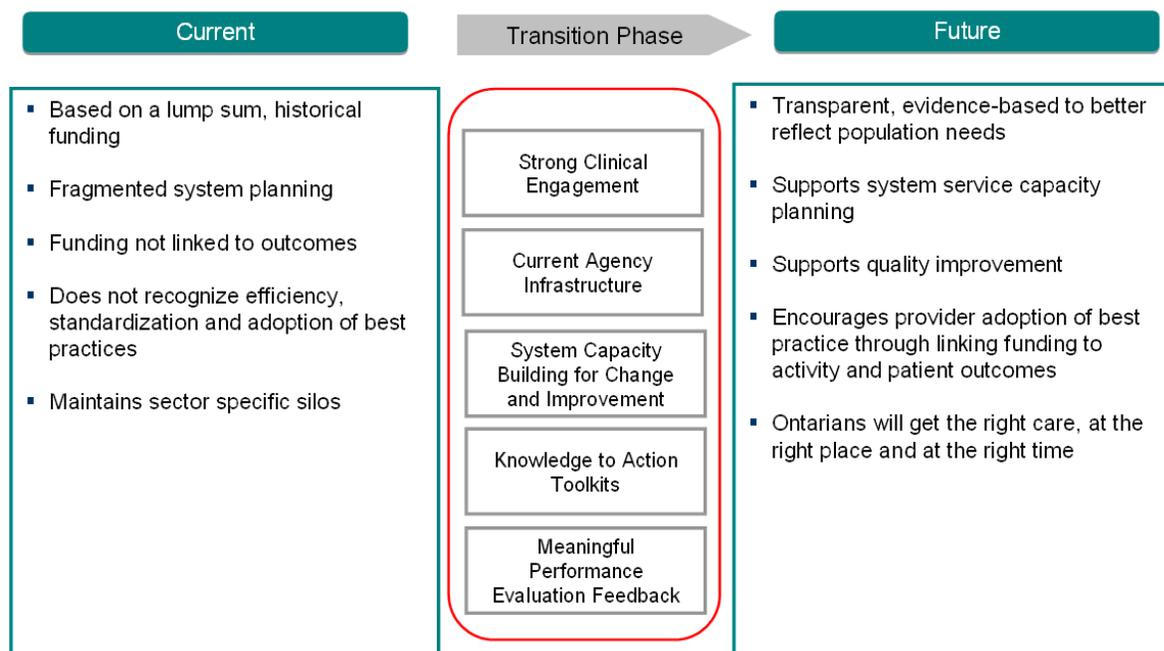
Prior to the introduction of HSFR, a significant proportion of hospital funding was allocated through a global funding approach, with specific funding for select provincial programs, wait times services and other targeted activities. A global funding approach may not account for complexity of patients, service levels and costs and may reduce incentives to adopt best practices that result in improved patient outcomes in a cost-effective manner.

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 provide incentives to health care providers to become more efficient and effective in their patient management by accepting and adopting best practices that ensure Ontarians get the right care, at the right time and in the right place.

The variations in patient care evident in the global funding approach warrant the move towards a system where 'money follows the patient' (Figure 1).

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

Figure 1: The Ontario government is committed to moving towards patient-centred, evidence-informed funding that reflects local population needs and incents delivery of high quality care



2.2 How will we get there?

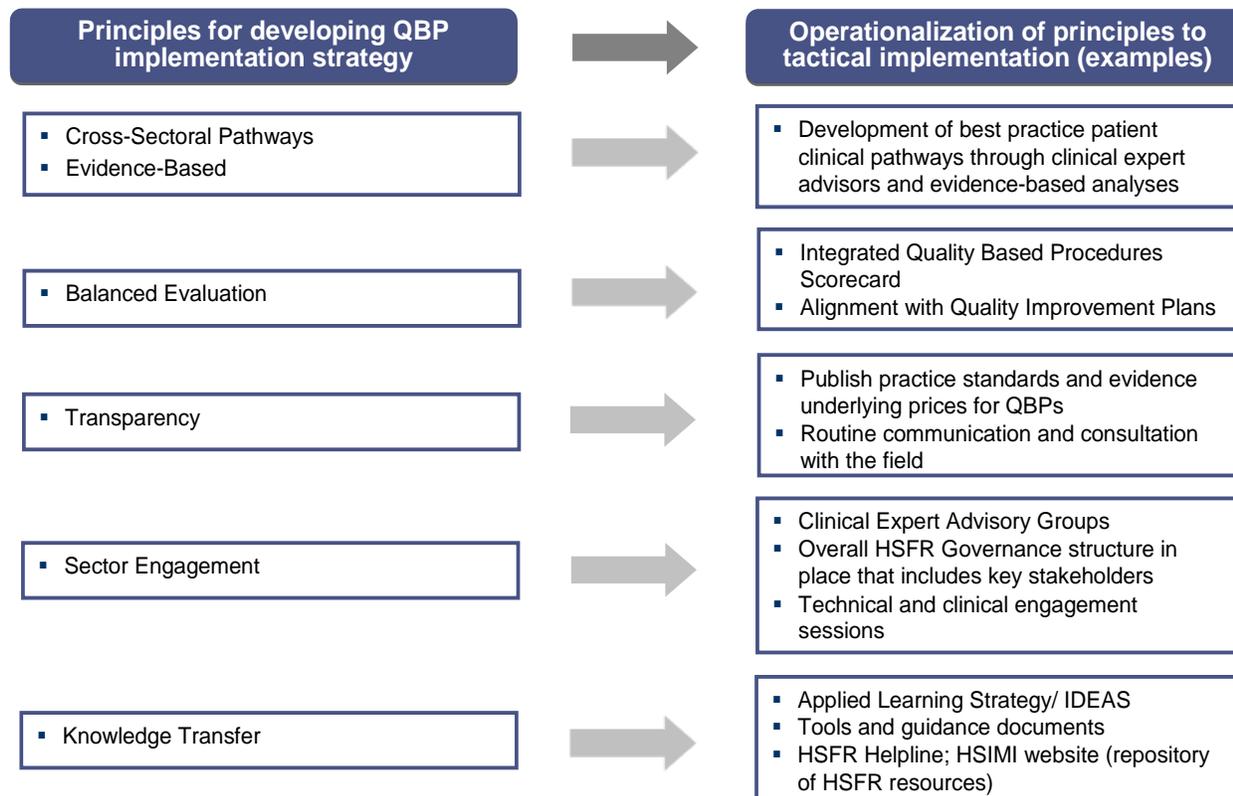
The ministry has adopted a multi-year implementation strategy to phase in the HSFR strategy and will make modest funding shifts beginning April 2012. A three-year outlook has been provided to the field to support planning for upcoming funding policy changes.

The ministry has released a set of tools and guiding documents to further support the field in adopting the funding model changes. For example, a Quality-Based Procedure (QBP) interim list has been published for stakeholder consultation and to promote transparency and sector readiness. The list is intended to encourage providers across the continuum to analyze their service provision and infrastructure in order to improve clinical processes and where necessary, build local capacity. However, as implementation evolves, the interim List will continue to undergo further refinements pending stakeholder feedback and advice from the QBP Clinical Expert Advisory Groups.

The successful transition from the current, 'provider-centred' funding model towards a 'patient-centred model' will be catalyzed by a number of key enablers and field supports. These enablers translate to actual principles that guide the development of

the funding reform implementation strategy related to QBPs. These principles further translate into operational goals and tactical implementation, as presented in Figure 2.

Figure 2: Principles guiding the implementation of funding reform related to Quality-Based Procedures



2.3 What are Quality-Based Procedures?

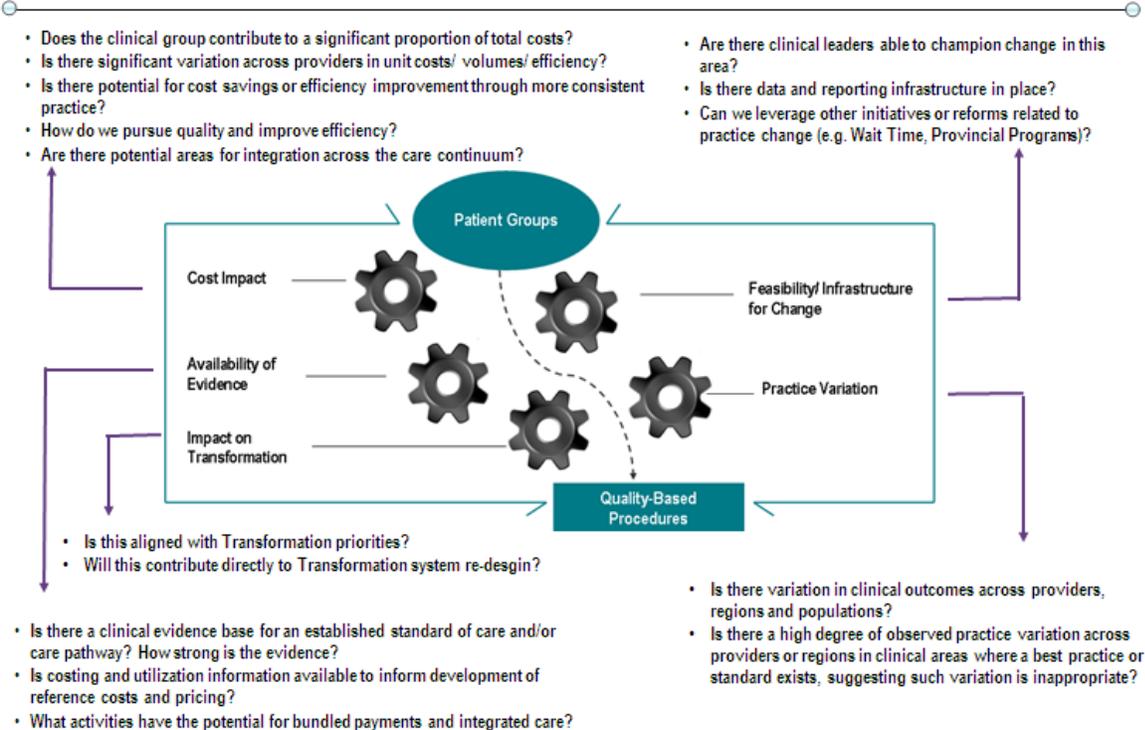
QBPs are clusters of patients with clinically related diagnoses or treatments that have been identified using an evidence-based framework as providing opportunity for process improvements, clinical re-design, improved patient outcomes, and enhanced patient experience and potential cost savings.

The evidence-based framework uses data from 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 was used from the Ontario Case Costing Initiative (OCCI), and Ontario Cost Distribution Methodology (OCDM). Evidence such as publications from Canada and other jurisdictions and World Health Organization reports were also used to assist with the patient clusters and the assessment of potential opportunities.

The evidence-based framework assessed patients using five perspectives, as presented in Figure 3. This evidence-based framework has identified QBP's that have the potential to improve quality of care, standardize care delivery across the province and show increased cost efficiency.

Figure 3: 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



1. Practice Variation

The DAD has every Canadian patient discharge (except Quebec), coded and abstracted for over 50 years. This information is used to identify patient transition through the acute care sector, including discharge locations, expected lengths of stay and readmissions for each and every patient, based on their diagnosis and treatment, age, gender, co-morbidities and complexities and other condition specific data. A demonstrated large practice or outcome variance may represent a significant opportunity to improve patient outcomes by reducing this practice variation and focusing on evidence-informed practice. 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. Ontario has detailed case costing data from many hospitals, as far back as 1991 for all patients discharged from some case costing hospitals, as well as daily utilization and cost data by department, by day and by admission.

2. Availability of Evidence

A significant amount of research has been completed both in Canada and across the world to develop and guide clinical practice. Working with the clinical experts, best practice guidelines and clinical pathways can be developed for these QBP's and appropriate evidence-informed indicators can be established to measure the quality of QBP care and help identify areas for improvement at the provider level and to monitor and evaluate the impact of QBP implementation.

3. Feasibility/ Infrastructure for Change

Clinical leaders play an integral role in this process. Their knowledge of the patients and the care provided or required represents an invaluable component of assessing where improvements can and should be made. Many groups of clinicians have already formed and provided evidence and the rationale for care pathways and evidence-informed practice.

4. Cost Impact

The selected QBP should have as a guide no less than 1,000 cases per year in Ontario and represent at least one per cent of the provincial direct cost budget. While cases that fall below these thresholds may in fact represent improvement opportunity, the resource requirements to implement a QBP may inhibit the effectiveness for such a small patient cluster, even if there are some cost efficiencies to be found. Clinicians may still work on implementing best practices for these patient sub-groups, especially if it aligns with the change in similar groups. However, at this time, there will be no funding implications. The introduction of evidence into agreed-upon practice for a set of patient clusters that demonstrate opportunity as identified by the framework can directly link quality with funding.

5. Impact of Transformation

The selected QBP's must align with the government's transformational priorities including alignment with the tenets of ***Ontario's Action Plan for Health Care***. In addition, a natural progression and trajectory to assess a QBP's impact on transformation would be to begin to look at other patient cohorts (e.g. paediatric patient populations), impact on the transition of care from acute-inpatient to community care setting, significant changes from historical funding models/ approaches, integrated care models etc. QBP's with a lesser cost impact but a large impact on the transformation agenda may still be a high priority for creation and implementation.

2.4 How will QBPs encourage innovation in health care delivery?

QBP strategy is driven by clinical evidence and best practice recommendations from the Clinical Expert Advisory Groups. The Clinical Expert Advisory Groups are comprised of cross-sectoral, multi-geographic and multi-disciplinary membership with representation from patients as well. The panel members leverage their clinical experience and knowledge to define the patient populations and recommend best practices.

Once recommended best practices are defined, these practices are used to understand required resource utilization for the QBPs and 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 redesign to improve patient outcomes.

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

QBPs create opportunities for health system change 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 will be in the development of indicators to allow for the evaluation and monitoring of actual practice and support on-going quality improvement.

3.0 Cancer Surgery QBP

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 patient.

In Ontario, over 80 hospitals provide some type of cancer surgery services.

3.1 Overview of Cancer Surgery Agreements (CSA)

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 CSA program since 2004. The intent of the CSA is to increase the volume of high quality cancer surgeries performed in Ontario to reduce wait times while continually improving the quality of cancer surgery across Ontario.

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

On an annual basis, CCO distributes 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. Each participating hospital has four main requirements to achieve in order to attain the targets set out in the CSA. These include:

- Volume requirements to ensure the hospital performs the allocated number of surgeries and work with hospitals within the region to ensure volumes are completed and patients have appropriate access;
- Quality requirements which involves developing and implementing quality guidelines and standards and implementing best practices;
- Reporting requirements which involves reporting performance data on all cancer surgery volumes, cancer surgery waiting times for each surgical specialty, and other key quality indicators, and
- Working with the RVP to develop a Regional cancer Program as described in the Ontario Cancer Plan.

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) Eventually merge the portions of the CSA program into QBP funding
- c) Allow the funding to follow the patient providing equitable access and distribution of funds

Also with the transition, QBP will run in conjunction with Cancer Surgery Agreements (CSA), as disease sites are implemented into QBP they will be removed from CSA incremental funding. For example, in FY15/16 all funding for prostate and colorectal cancer surgery will be accounted for though QBP, prostate and colorectal cancer will not be a part of the CSA. Slowly disease sites will transition from CSA to QBP.

3.2 Overview of Cancer Surgery QBP Implementation Strategy

There are over 50,000 curative cancer surgeries every year which are compiled of several hundred types of procedures across 100 hospitals in Ontario. A phased approach will be taken in order to accomplish the significant task of implementing QBP based funding for all of cancer surgery.

The phased approach will be based on the patient journey and disease site.

Patient Journey Scope:

The patient journey scope refers to the patients experience before, during and after treatment. These are described as:

Consult / Pre-Treatment Assessment: Before a treatment plan is decided upon the surgeon will conduct an assessment to understand the extent of the disease and if the patient is a surgical candidate. This assessment may include diagnostic imaging and

biopsy including pathology assessment, a multidisciplinary consult or multidisciplinary cancer conference. These activities may occur within a hospital or physician office.

Treatment: This phase refers to the surgical procedure performed within an operating room. By definition, it occurs within the hospital setting. It begins at the pre-admission visit (approximately 1 week before the surgical procedure) and ends when the patient is discharged from the hospital.

Follow up: Once the surgical procedure is completed, a patient will require follow up to monitor recurrence of the disease. The frequency of visits and tests required are dependent upon the disease. This activity may occur in or out of the hospital setting.



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

Figure 4: Patient Journey Scope



3.3 Disease Site Selection

The Cancer Surgery QBP portfolio will consist of numerous disease sites. The disease sites include:

- Gastrointestinal: Colon, Rectal, Stomach,
- Hepatobiliary: liver, biliary, pancreas
- Thoracic: Lung, esophagus
- Breast Cancer
- Thyroid
- Genitourinary: kidney, bladder, testis, adrenal gland
- Prostate
- Gynecology: Endometrium, Cervical, Ovarian, Vulvar

- Ophthalmic
- Head & Neck
- Sarcoma: Bone, Soft Tissue
- Neurology: brain, spinal
- Skin (including melanoma)

Cancer surgery has been identified as a QBP using the evidence based selection framework. These criteria are described in Figure 5.

Figure 5: Evidence and Quality-Based Framework- Cancer Surgery

	Availability of Evidence	Feasibility & Infrastructure for Change	Practice Variation	Cost Estimate	Transformation Impact
Cancer Surgery	Significant number of guidelines and pathways that describe appropriate treatment paths for various disease sites	<p>Regional leadership in place for a number of disease sites</p> <p>Indicators in place for various disease sites that are currently measured and planned to be measured in the future</p> <p>Through Organizational Guidelines some disease sites have been centralized to designated centres.</p>	Demonstrated successes with identifying quality issues the improvement of specific indicators	It is estimated that cancer surgery accounts for approximately \$450M in funding, over 50,000 surgeries annually taking place at over 80 hospitals	Impacts patient care and journey though the cancer care trajectory
Prostate Cancer Surgery	<p>Significant number of guidelines and pathways that describe appropriate treatment paths</p> <ul style="list-style-type: none"> ▪ Prostate Clinical Pathway (DPM) ▪ Margins and lymph nodes guidelines (Surgery and Pathology) 	<p>Leadership</p> <ul style="list-style-type: none"> ▪ Prostate Champions (Surgery and Pathology) <p>Data/Reporting</p> <ul style="list-style-type: none"> ▪ Positive Margins; radiation oncology consults before surgery that are currently in place 	<p>Positive Margins for pT2</p> <ul style="list-style-type: none"> •Ontario: 22% •LHIN Range: 16%-36% <p>GU/Prostate MCC Concordance to minimum standards</p> <ul style="list-style-type: none"> •Q1 FY13/14: 66% •Q1 FY14/15: 76% 	<p>Cost Estimate</p> <p># prostate cases x CSA case cost (merged rate) = 2788 x \$5015 = \$1.4M</p> <p>Hospitals</p> <p>~ 51 hospitals</p>	Potentially with transfer from hospital to community care

Colon and Rectal Cancer Surgery	<p>Significant number of guidelines and pathways that describe appropriate treatment paths</p> <ul style="list-style-type: none"> ▪ CRC Clinical Pathway (DPM) ▪ Margins and lymph nodes guidelines (Surgery and Pathology) ▪ Appropriate assessment of rectal cancer ▪ Radiology and Pathology tools/templates 	<p>Leadership</p> <ul style="list-style-type: none"> ▪ CRC Champions (Surgery and Pathology) <p>Data/Reporting</p> <ul style="list-style-type: none"> ▪ Positive Margins; lymph node examination, ▪ Development of indicator for appropriate assessment (eg. MRI) before surgery 	<p>GI MCC Concordance to minimum standards</p> <ul style="list-style-type: none"> •Q1 FY13/14: 76% •Q1 FY14/15: 86% <p>The provincial positive circumferential margin rate is less than 10% with some regional variation.</p> <p>The lymph node retrieval rate after colon resection has been above 90% consistently.</p> <p>Preliminary Ontario data indicates variation in pre-op MRI assessment of rectal cancer</p>	<p>Cost Estimate</p> <p># CRC cases x CSA case cost (merged rate) = 7000 x \$10615 = \$74M</p> <p>Hospitals</p> <ul style="list-style-type: none"> ▪ ~ 90 hospitals 	<p>Potentially with transfer from hospital to community care</p>
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Cancer Surgery QBP implementation will take a phased implementation approach by disease site:

- FY15/16: Implementation of prostate and colon/rectal cancer surgery



NOTE: The focus of this clinical handbook will be Prostate Cancer Surgery (Radical Prostatectomy) and Colorectal Cancer Surgery

4.0 Prostate Cancer Surgery

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).

Prostate cancer occurs when cells of the prostate reproduce at a faster rate than in a normal prostate, causing a tumour. 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 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.

Prostate cancer surgery is performed by urologists. Urologists performing prostate cancer surgery can either be general urologists, treating a number of diseases, or urologic oncologists, focusing specifically on the treatment of urologic cancers

A radical prostatectomy is the surgical removal of the prostate gland and surrounding tissue. The prostate is surrounded by important nerves that in most cases are avoided though some patients may experience urinary incontinence (stress and total) and erectile dysfunction (ED) as some of the side effects.

There are four surgical approaches used for a Radical Prostatectomy.

- An **open perineal** 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** 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 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.

4.1 Prostate Cancer Surgery Scope (Radical Prostatectomy)

Factor	Included	Excluded
Diagnosis & Procedure Codes	<p>A radical prostatectomy will be identified as a case that has:</p> <ul style="list-style-type: none"> ▪ <u>Main diagnosis code</u>: C61 (malignant neoplasm of the prostate) <p>AND</p> <p><u>Primary intervention field</u>: one of the following CCI procedure codes</p> <ul style="list-style-type: none"> ▪ 1QT91PB - Radical excision prostate (open perineal) ▪ 1QT91PK - Radical excision prostate (open retropubic) ▪ 1QT91DA – Radical excision prostate (laparoscopic) <p>Note: Robotic procedures are captured with the CCI procedure code 1QT91DA AND the subcode 7.SF.14.ZX Robotic assisted telemanipulation of tools, service, using system NEC, mandatory (robotic)</p>	Records where main intervention is missing
Data Source	DAD	NACRS
Visit Type/ Activity	<p>In-patient</p> <ul style="list-style-type: none"> • Elective cases • Urgent cases • Emergent cases 	<ul style="list-style-type: none"> • Day Surgery • 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 discharge date and birth date

4.2 Best practices¹ guiding the implementation of Prostate Cancer Surgery

Radical Prostatectomy Length of Stay

Analysis

Length of stay analysis was conducted for the in-scope patient cohort over the most recent timeframe available.

Diagnosis Code	CCI Procedure Code	Description	FY12/13			FY13/14 (Q1 +Q2)		
			Volume	Ontario Mean	Ontario Mean (excl. > 90 th percentile)	Volume	Ontario Mean	Ontario Mean (excl. > 90 th percentile)
Malignant neoplasm of Prostate (C61)	1QT91DA (Laparoscopic)	Excision radical, prostate, using endoscopic (laproscopic) approach	505	2.27	1.95	90	1.87	1.76
	1QT91DA (Robotic)	Excision radical, prostate, using endoscopic (laproscopic) approach WITH LINK TO Robotics	209	1.92	1.71	376	1.73	1.57
	1QT91PB (Open Perineal)	Excision radical, prostate using open perineal approach	98	2.8	2.42	43	2.58	1.61
	1QT91PK (Open Retropubic)	Excision radical, prostate using open retropubic approach	2057	2.97	2.63	893	3.03	2.64

Recommendation:

The following recommendations are based on analysis and expert consensus:

Radical Prostatectomy Procedure Type	Best Practice Length of Stay
Open Perineal	3 days
Open Retropubic	3 days
Robotic	2 days
Laparoscopic	2 days

¹ Best practice refers to a combination of best available evidence and clinical consensus as recommended by the Clinical Expert Advisory Groups

Radical Prostatectomy Best Practice Definition

Relevant Cancer Care Ontario Guidelines:

- **Guideline for Optimization of Surgical and Pathological Quality Performance in Radical Prostatectomy in Prostate Cancer Management.** 17-3 EBS: September 2008
- **Special Report: Multidisciplinary Cancer Conferences (MCC)** June 2006

Pathway Development Process

To develop the best practice pathway of care for radical prostatectomy, the following process was followed:

- A literature scan was completed
- Existing care paths were collected from the hospitals of QBP members
- Common practices and collaborative guidelines were then consolidated to create the best practice care path recommended for the patient population
- Expert consensus was obtained

The best practice focused on identifying and implementing evidence-informed practice driven by clinical consensus.

Best practice has been categorized into the following stages:

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

Final Recommendations

1. Pre-Surgical Assessment (prior to surgery)

Tests:

- CBC to determine risk of transfusion
 - ~ 6% of patients require blood transfusions
- Na, K, CL, Creatinine, Glucose, Electrolytes

If applicable:

- ECG if patient has heart disease, diabetes or other risk factors for cardiac condition
- PT/PTT/INR if patient has liver disease
- Urine and culture if patient at risk of or showing symptoms of urinary tract infection

Assessments:

- Pre-admission assessment (Vital signs, HT, WT etc.)
- MRSA/CPE screening
- Assessment by transfusion nurse/nurse

Consults:

- Anesthesiology/pain management consult- as required
- Internal Medicine (Cardiology)- as required

Medications:

- Review all current medications by Pharmacist or Nurse
- Note allergies and intolerances
- Provide information about discontinuation of NSAIDS/antiplatelet/anticoagulants if necessary

Patient/Family Teaching:

- Educate patient on the surgical procedure
- Review pre-operation and post- operative events and expectations
- Review plan for pain management
- Inform patient about blood transfusion should it become necessary
- Review self-care measures to prevent post-op complications
- Review patient education booklets, pamphlets, etc.
- Educate patient on breathing and recovery exercises
- Obtain consent for possible transfusion- completed by surgeon

Discharge Planning:

- Review discharge plan with the patient including, expected length of stay, discharge time, and issues or complications that could delay discharge
- Involve Social worker or CCAC if necessary

2. Day Before Surgery

Assessments:

- +/- Bowel preparation- if required

Nutrition:

- DAT
- Clear liquids up to 2-3 hours prior to surgery
- No solids after midnight the day prior to surgery

3. Day of Surgery- POCU

Tests:

- Cross match blood for patients at high risk for bleeding- if necessary

Assessments:

- Pre-operative assessment by nurse, surgeon and anesthesiologist
- Blood work as required (e.g. glucose)
 - Type 2 diabetes impacts 15% of patients
- +/- Enema- if required

Medications:

- IV antibiotics: 1st/2nd gen. Cephalosporin, Aminoglycoside + Metronidazole or Clindamycin
Alternative:
 - Ampicillin/Sulbactam, Fluoroquinolone- if patient allergic
- Colloid fluid
- Tranexamic Acid, as required
- VTE prophylaxis (e.g. heparin, SCD as per institutional protocol) administered in the POCU or Operating Room

Nutrition:

- NPO – no solid food after midnight the day prior to surgery
- Sips of water with meds
- Encourage 8oz. of clear carbohydrate drink (e.g.: apple juice, cranberry juice, Gatorade) 3 hours prior to the surgery- optional

4. Day of Surgery- Operating Room

Assessments:

- Complete surgical checklist

Treatments:

- Radical prostatectomy and pelvic lymph node dissection (if necessary) performed
- Ensure all equipment is available
 - Special equipment: arterial line, cardiac output monitors, etc.)
- Ensure all resources are present (OR nurse, surgeon, anesthesiologist)
- CCO pathology requisition completed by surgeon
- Ensure specimen is appropriately labelled and sent to pathology for processing/assessment

Medications:

- Local anesthetic block- as needed

5. Day of Surgery- PACU (Day 0)

Tests:

- CBC
- Electrolytes, creatinine, etc.
- Diabetic patient (glucose ordering and monitoring)
 - Type 2 diabetes impacts 15% of patient population(Tests may be performed once or as needed based on patient condition)

Assessment:

- Post-operative assessment by nurse, surgeon and anesthesiologist (system & pain)

Consults:

- Acute Pain Services

Treatment:

- Monitor patient recovery (e.g. urine output, catheter drainage, wound dressing, JP drain, IV, etc.)

Medication:

- Patient specific medication
- Oral pain medication
- VTE prophylaxis
- Medication for bladder spasms
 - 100% patients get preventative medication
- PCA (for a duration of 24 hours), as required

Activity:

- Breathing and recovery exercises

Nutrition

- Clear liquids

6. Day after Surgery- Post Operative Day 1+ onwards

Tests:

- CBC
- Electrolytes, creatinine, etc.
- Diabetic patient (glucose ordering and monitoring)
 - Type 2 diabetes impacts 15% of patient population
 (Tests may be performed once or as needed based on patient condition)

Assessment:

- Discharge assessment by nurse and/or surgeon (system, pain, recovery)

Consults:

- Physiotherapy (pelvic floor rehabilitation)

Treatment:

- Removal of IV
- Remove JP drain once drainage is less than 50 ml for 24 hours
 - Less than 2% of patients are discharged with a JP drain in place
- Wound dressing

Medication:

- Patient specific medication
- Oral pain medication
- VTE prophylaxis

Activity:

- Walking independently

Nutrition

- Regular Diet

Patient/Family Teaching:

- Review home management of catheter
- Review home management of wound
- Review signs and symptoms of wound infection, urine infection and bladder distention

Discharge Planning:

- Discuss discharge preparation
- Ensure patient meets clinical indicators to be discharged
- Review discharge plan with patient and family
- Inform patients of follow-up appointments
- CCAC consult

5.0 Colorectal Cancer Surgery

Colorectal cancer, cancer of the colon or rectum, is a disease in which malignant (cancer) cells form in the tissues of the colon. The colon is part of the body's digestive system which helps pass waste material out of the body. The first part of the large intestine is called the colon. The last part is the rectum and the anal canal. The anal canal ends at the anus.

Depending 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.

5.1 Colorectal Cancer Surgery Scope

Factor	Included	Excluded
Diagnosis & Procedure Codes	<p>A colorectal cancer surgery will be identified as a case that has:</p> <ul style="list-style-type: none"> <u>Main diagnosis code</u>: all malignant neoplasm codes specifically C00 to C97 within ICD-10- CA or organ-related benign neoplasm, as outlined in Table 1 of <i>Appendix A</i>, <p>AND</p> <ul style="list-style-type: none"> <u>Primary Intervention</u> (CCI procedure code): as listed in Table 2 of <i>Appendix A</i> 	Records where main intervention is missing
Data Source	DAD	NACRS
Visit Type/ Activity	<p>Inpatient</p> <ul style="list-style-type: none"> Elective cases Urgent cases Emergent cases 	<ul style="list-style-type: none"> Day Surgery 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 discharge date and birth date

5.2 Best practices guiding the implementation of Colorectal Cancer Surgery

Colorectal Cancer Surgery Length of Stay

Analysis

Length of stay analysis was conducted for the in-scope patient cohort over the most recent timeframe available.

			12/13			13/14			Y/Y % Change	Y/Y % Change
Procedure Group	Admission Category	Lap/Open	Cases	LOS Average	LOS Median	Cases	LOS Average	LOS Median	LOS Average	LOS Median
Colon	Elective	Laparoscopic	1909	6.1	5.0	2057	5.9	4.0	-2%	-20%
		Open	1743	9.4	7.0	1565	8.7	6.0	-8%	-14%
	Emergency	Laparoscopic	179	14.7	10.0	241	12.6	9.0	-14%	-10%
		Open	792	17.8	13.0	739	16.6	12.0	-7%	-8%
	Total Colon			4623	9.7	6.0	4602	8.9	6.0	-8%

			12/13			13/14			Y/Y % Change	Y/Y % Change
Procedure Group	Admission Category	Lap/Open	Cases	LOS Average	LOS Median	Cases	LOS Average	LOS Median	LOS Average	LOS Median
Rectum	Elective	Laparoscopic	525	6.7	5.0	507	6.1	4.0	-10%	-20%
		Open	1474	9.7	7.0	1320	9.3	7.0	-4%	0%
	Emergency	Laparoscopic	27	15.4	8.0	30	12.3	6.0	-20%	-25%
		Open	111	19.8	13.0	112	16.3	11.0	-18%	-15%
	Total Rectum			2137	9.6	7.0	1969	8.9	7.0	-7%

Recommendation:

The following recommendations are based on analysis of empirical data and expert consensus:

Procedure Group	Admission Category	Procedure Type	Best Practice Length of Stay
Colon	Elective	Laparoscopic	4 days
		Open	6 days
	Emergency	Laparoscopic	9 days
		Open	12 days
Rectum	Elective	Laparoscopic	4 days
		Open	7 days
	Emergency	Laparoscopic	6 days
		Open	11 days

Colorectal Cancer Surgery Best Practice Definition

Relevant Cancer Care Ontario Guidelines:

- **Optimization of Preoperative Assessment in Patients Diagnosed with Rectal Cancer** 17-8 EBS: January 20, 2014
- **Optimization of Surgical and Pathological Quality Performance in Radical Surgery for Colon and Rectal Cancer: Margins and Lymph Nodes** 17-4 EBS: April 2008
- **Special Report: Multidisciplinary Cancer Conferences (MCC)** June 2006

Pathway Development Process

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

- A literature scan was completed
- Existing care paths were collected from the hospitals of QBP members. It was apparent that the majority of hospitals are implementing the Enhanced Recovery after Surgery pathway for colon and rectal surgery developed by Best Practice in General Surgery². With working group consensus this pathway was used as the basis for the QBP best practice.

² Aarts MA, Okrainec A, McCluskey S, Siddiqui N, Wood T, Pearsall E, & McLeod RS on behalf of the Best Practice in General Surgery. *Enhanced Recovery after Surgery Guideline*. www.bpigs.ca.

- Common practices and collaborative guidelines were then consolidated to create the best practice care path recommended for the patient population
- Expert consensus was obtained with the working group

The best practice focused on identifying and implementing evidence-informed practice driven by clinical consensus.

Best practice for colon and rectal resections has been categorized into the following stages:

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

Final Recommendations

1. Pre-Surgical Assessment (prior to surgery)

Tests:

- CBC to determine risk of transfusion
- Na, K, Cl, creatinine, glucose, electrolytes
- CEA for all patients if one has not been ordered previously
- Group and screen for all patients having a colon operation
- *If applicable:*
- ECG if patient has heart disease, diabetes or other risk factors for cardiac condition
- PT/PTT/INR if patient has liver disease

Assessments:

- Pre-admission assessment (vital signs, HT, WT etc.)
- Assessment by transfusion nurse/nurse

Consults:

- Anesthesiology/pain management consult- as required
- Enterostomal Therapy Nurse (ET Nurse) for patients planning to have a stoma

Medications:

- Review all current medications by pharmacist or nurse
- Note allergies and intolerances
- Penicillin allergies should be reviewed
- Provide information about discontinuation of NSAIDs/antiplatelet agents/anticoagulants if applicable
- Prescribe iron to patient or arrange iron transfusion pre-operatively to decrease transfusion rates

Patient/Family Teaching:

- Educate patient on the surgical procedure
- Review pre-operation and post-operative events and expectations
- Review length of stay expectations with patient
- Review plan for pain management and anesthetics

- Inform patient about blood transfusion should it become necessary
- Review self-care measures to prevent post-op complications
- Review patient education booklets, pamphlets, etc.
- Educate patient on breathing and recovery exercises
- Provide patient with instructions for bowel prep- as required
- Educate the patient on the type of stoma, postoperative goals of care and life with an ostomy
- Educate patient on Enhanced recovery after surgery

Discharge Planning:

- Review discharge plan with the patient including, expected length of stay, discharge time, and issues or complications that could delay discharge
- Involve Social worker or CCAC if necessary
 - All patients having a stoma require CCAC on discharge

2. Day Before Surgery

Assessments:

- Recommended bowel preparation for patients with anastomosis below the peritoneal reflection

Nutrition:

- Encourage 8oz. of clear carbohydrate drink (e.g.: apple juice, cranberry juice, Gatorade®) the night before surgery and 2 hours prior to the surgery
- NPO – no solid food after midnight the day prior to surgery

3. Day of Surgery- POCU

Tests:

- Cross match blood for patients at high risk for bleeding- if necessary

Assessments:

- Pre-operative assessment by nurse, surgeon and anesthesiologist
- Blood work as required (e.g. glucose)

Medications:

- Unfractionated or low molecular weight heparin injection (Administered in the POCU or Operating Room unless patient is scheduled for an epidural)
- NSAIDS for patients not having anastomosis
- Gabapentin- to decrease pain post-operatively
- Acetaminophen

4. Day of Surgery- Operating Room

Assessments:

- Complete surgical checklist.

Treatments:

- Colon/rectal resection performed, with appropriate lymph node removal
- Ensure all equipment is available
 - This includes laparoscopic equipment if the procedure is being performed
- Ensure all human resources are present (OR nurse, surgeon, anesthesiologist)
- CCO pathology requisition completed by surgeon
- Ensure specimen is appropriately labelled and sent to pathology for processing/assessment
- Perioperative normothermia
 - Warming blanket
 - Fluid warming
- Skin prep with chlorhexidine alcohol solution

- Intraoperative fluid management
- Avoidance of prophylactic drains and tubes

Medications:

- SSI prophylaxis (SSI guideline)
- VTE prophylaxis (VTE guideline)
- Thoracic epidural or intravenous Lidocaine for pain management (intra-operatively)

5. Day of Surgery- PACU (Day 0)

Assessments:

- Post-operative assessment by nurse, surgeon and anesthesiologist (system & pain)
- Patient recovery (e.g. bleeding, etc.)

Consults:

- Acute Pain Services

Medication:

- Patient specific medication
- NSAIDS for patients not having anastomosis
- PCA narcotics
- Acetaminophen
- Lidocaine for pain management

Activity:

- Breathing and recovery exercises
- Sit up with assistance and dangle legs for at least 10-15 minutes at side of bed every 2-4 hours

Nutrition

- Clear fluids

6. Day after Surgery- Post Operative Day 1+ onwards

Assessment:

- Discharge assessment by nurse and/or surgeon (system, pain, recovery)

Care of Patient:

- Surgeon, nurse, pain service care and physiotherapy, dietician and pharmacist care and consults as necessary
- Special care for ostomy patients. E.g.:
 - Pouch emptying
 - Pouch changes
 - Ordering of supplies

Treatment:

- Removal of foley catheter within 24 hours for colon surgery so that the patient can urinate on their own
- Removal of foley catheter within 72 hours for rectal surgery so that the patient can urinate on their own

Medication:

- Patient specific medication
- Oral pain medication
- Multimodal pain management (PCA or epidural, acetaminophen, NSAIDs for patients not having anastomosis) and oral pain medication for discharge

Activity:

- Deep breathing and coughing exercises 10 times every hour while awake
- Sit in chair for all meals
- Get up and walk every 4-6 hours (with assistance if necessary)
- Use the bathroom to urinate- patient will not use bedpan or urinal

Nutrition

- Begin eating solids and continue drinking fluids
- Chew gum for 5 minutes 3 times a day to get the digestive system working

Discharge Planning:

- Discuss discharge preparation
- Ensure patient meets clinical indicators to be discharged (bowel movement, regular diet, no nausea, etc.)
- Review discharge plan with patient and family
- Inform patients of follow-up appointments
- Provide patient with pain medication prescription- if necessary
- CCAC Consult
- Patient education including wound care

6.0 Implementation of best practices

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

- 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

6.1 Knowledge Transfer and Exchange of Best Practice Care

Communicating the defined best practice for cancer surgery procedures (in-hospital care) is critical to the implementation of Cancer Surgery QBP. CCO will work closely not only the working groups but also hospital administrators and clinicians for successful implementation within each disease site.

7.0 What does it mean for multi-disciplinary teams?

Successful implementation of the new funding model for cancer surgery requires the collaboration on the part of all those involved in the patients care delivery. Surgeons, pathologists, radiation oncologists, radiologist, medical oncologists, anaesthesiologists, nursing and physiotherapists should be aware of and contribute to the best practice. Clerical staff ensure accurate data entry and coding for reimbursement and quality indicator measurement. Administrative staff need to be aware of best practice in regards of performance management and quality indicator reporting.

As the initial implementation of the prostate surgery QBP only addresses the surgical procedure, the impact on some of the members of the multi-disciplinary team will be minimal. In future with further expansion of the cancer surgery QBP to include the Consult/Pre-Treatment Assessment or Follow-up phases will have a greater impact on the multidisciplinary team.

7.1 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.

7.2 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 patient population and ensuring that the highest quality care is provided for all their 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

7.3 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.

8.0 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.

9.0 Performance evaluation and feedback

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 information for clinicians and administrators that will enable mutual learning and promote on-going quality improvement
- Providing performance-based information back to Expert Panels to evaluate the impact of their work and update as required in real time

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.

To guide the selection and development of relevant indicators for each QBP, the ministry, in consultation with experts in evaluation and performance measurement, developed an approach based on the policy objectives of the QBPs and a set of guiding principles. This resulted in the creation of an integrated scorecard with the following six quality domains:

- Effectiveness (including safety)
- Appropriateness
- Integration
- Efficiency
- Access
- Patient-centeredness

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)

A set of evaluation questions was identified for each of the QBP policy objectives outlining what the ministry would need to know in order to understand the intended and unintended impact of the introduction of QBPs. These questions were translated into key provincial indicators resulting in a QBP scorecard (see table below).

Quality Domain	What is being measured?	Key provincial indicators
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?	<ol style="list-style-type: none"> 1. Proportion of QBPs that improved outcomes 2. Proportion of QBPs that reduced variation in outcome 3. Proportion of (relevant) QBPs that reduced rates of adverse events and infections
Appropriateness	Is patient care being provided according to scientific knowledge and in a way that avoids overuse, underuse or misuse?	<ol style="list-style-type: none"> 4. Proportion of QBPs that reduced variation in utilization 5. Proportion of (relevant) QBPs that saw a substitution from inpatient to outpatient/day surgery 6. Proportion of (relevant) QBPs that saw a substitution to less invasive procedures 7. Increased rate of patients being involved in treatment decision 8. Proportion of (relevant) QBPs that saw an increase in discharge dispositions into the community
Integration	Are all parts of the health system organized, connected and work with another to provide high quality care?	<ol style="list-style-type: none"> 9. Reduction in 30-day readmissions rate (if relevant) 10. Improved access to appropriate primary and community care including for example psychosocial support (e.g. personal, family, financial, employment and/or social needs) 11. Coordination of care (TBD) 12. Involvement of family (TBD)
Efficiency	Does the system make best use of available resources to yield maximum benefit ensuring that the system is sustainable for the long term?	<ol style="list-style-type: none"> 13. Actual costs vs. QBP price

Quality Domain	What is being measured?	Key provincial indicators
Access	Are those in need of care able to access services when needed?	14. Increase in wait times for QBPs / for specific populations for QBP 15. Increase in wait times for other procedures 16. Increase in distance patients have to travel to receive the appropriate care related to the QBP 17. Proportion of providers with a significant change in resource intensity weights (RIW)
Patient-Centeredness <i>(to be further developed)</i>	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)	18. Increased rate of patients being involved in treatment decision 19. Coordination of care (TBD) 20. Involvement of family (TBD)

It should be noted that although not explicitly mentioned as a separate domain, the equity component of quality of care is reflected across the six domains of the scorecard and will be assessed by stratifying indicator results by key demographic variables and assessing comparability of findings across sub-groups. Where appropriate, the indicators will be risk-adjusted for important markers of patient complexity so that they will provide an accurate representation of the quality of care being provided to patients.

The ministry and experts recognized that to be meaningful for clinicians and administrators, it is important to tie indicators to clinical guidelines and care standards. Hence, advisory groups that developed the best practices were asked to translate the provincial-level indicators into QBP-specific indicators. In consulting the advisory groups for this purpose, the ministry was interested in identifying indicators both for which provincial data is readily available to calculate and those for which new information would be required. Measures in the latter category are intended to guide future discussion with ministry partners regarding how identified data gaps might be addressed.

In developing the integrated scorecard approach, the ministry recognized the different users of the indicators and envisioned each distinct set of measures as an inter-related cascade of information. That is, the sets of indicators each contain a number of system or provincial level measures that are impacted by other indicators or driving factors that are most relevant at the Local Health Integration Networks (LHINs), hospital or individual clinician level. The indicators will enable the province and its partners to monitor and evaluate the quality of care and allow for benchmarking across organizations and clinicians. This will in turn support quality improvement and enable target setting for each QBP to ensure that the focus is on providing high quality care, as opposed to solely reducing costs.

It is important to note that process-related indicators selected by the expert panels will be most relevant at the provider level. The full list of these measures is intended to function as a 'menu' of information that can assist administrators and clinicians in identifying areas for quality improvement. For example, individual providers can review patient-level results in conjunction with supplementary demographic, financial and other statistical information to help target care processes that might be re-engineered to help ensure that high-quality care is provided to patients.

Baseline reports and regular updates on QBP specific indicators will be included as appendices to each QBP Clinical Handbook. Reports will be supplemented with technical information outlining how results were calculated along with LHIN and provincial-level results that contextualize relative performance. Baseline reports will also be accompanied by facility-level information that will facilitate sharing of best practices and target setting at the provider-level.

The ministry recognizes that the evaluation process will be on-going and will require extensive collaboration with researchers, clinicians, administrators and other relevant stakeholders to develop, measure, report, evaluate and, if required, revise and/or include additional indicators to ensure that the information needs of its users are met.

10.0 Cancer Surgery Quality Indicators

Measuring the quality of care provided to Ontarians is a significant aspect of the QBP funding initiative. Many indicators on the provincial scorecard apply to cancer surgery and have been highlighted. In addition, more indicators for cancer surgeries have been selected that either relate to: a) all cancer surgeries or b) are disease site specific.

Quality Domain	Description	Prostate Cancer	Colorectal 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?	<ol style="list-style-type: none"> 1. Proportion of patients re-operated on within 30 days after radical prostatectomy 2. Proportion of patients that died within 30 days after radical prostatectomy 3. Proportion of patients that experience a complication (e.g. rectal injury, transfusion rate, SSI) 	<ol style="list-style-type: none"> 1. Proportion of patients re-operated on within 30 days after a colorectal resection 2. Proportion of patients that died within 30 days after a colorectal resection 3. Proportion of patients that experience a complication (e.g. anastomotic leak, SSI)
Appropriateness	Is patient care being provided according to scientific knowledge and in a way that avoids overuse, underuse or misuse?	<ol style="list-style-type: none"> 4. Discipline participation in a high-quality Multidisciplinary Cancer Conference (MCC) 5. Proportion of patients that receive a radiation oncologist consult or discussion at a MCC prior to surgery 6. Proportion of patients with positive pT2 margins after radical prostatectomy 	<ol style="list-style-type: none"> 4. Discipline participation in a high-quality Multidisciplinary Cancer Conference (MCC) 5. Proportion of patients with positive circumferential margins after rectal resection 6. Proportion of colon resection patients with 12 or more lymph node retrieved 7. Proportion of patients that receive a MRI and CT before rectal cancer surgery
Integration	Are all parts of the health system organized, connected and work with another to provide high quality care?	<ol style="list-style-type: none"> 7. Proportion of patient readmissions within 30 days of discharge 8. Proportion of patients with positive that had a radiation oncology consult post-surgery 	<ol style="list-style-type: none"> 8. Proportion of patient readmissions within 30 days of discharge
Efficiency	Does the system make best use of available resources to yield maximum benefit ensuring that the system is sustainable for the long term?	<ol style="list-style-type: none"> 9. Average length of stay for a radical prostatectomy patient 	<ol style="list-style-type: none"> 9. Average length of stay for a colorectal resection patient

Quality Domain	Description	Prostate Cancer	Colorectal Cancer
Access	Are those in need of care able to access services when needed?	10. Proportion of prostate cancer surgery patients that received surgery (Wait 2) within the priority target 11. Proportion of patients with a discharge disposition into the community	10. Proportion of colorectal cancer surgery patients that received surgery (Wait 2) within the priority target
Patient-Centeredness <i>(to be further developed)</i>	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)		

11.0 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.

12.0 Frequently Asked Questions

There have been no frequently asked questions identified to date.

13.0 Membership

The following table outlines the members of the Cancer Surgery QBP Advisory Committee:

* Cancer Care Ontario representative

CANCER SURGERY QBP ADVISORY COMMITTEE (2014)			
NAME	TITLE & ORGANIZATION	NAME	TITLE & ORGANIZATION
Dr Jonathan Irish*	Provincial Health, Surgical Oncology Program	Faith Forbes	Finance & Manager of Redevelopment, HBAM & QBP, Humber River Hospital
Dr. Robin McLeod*	Surgical Lead, Quality Improvement & Knowledge Transfer	Dr. Stan Feinburg	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 Sundaesan	Chief, Division of Thoracic Surgery, The Ottawa Hospital
Leigh McKnight*	Project 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
Dave Sivakumaran*	Methodologist	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

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
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

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. Chala 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
Dr. Stan Feinburg	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

Appendices

Table 1: Colon and Rectal resection diagnosis codes for Cancer Surgery QBP

ICD10-CA (Diagnosis)	Description
From C00 to C97	All malignant neoplasm diagnosis codes

ICD10-CA (Diagnosis)	Description
D010	Carcinoma in situ of colon
D011	Carcinoma in situ of rectosigmoid junction
D012	Carcinoma in situ of rectum
D014	Carcinoma in situ of other and unspecified parts of intestine
D017	Carcinoma in situ of other specified digestive organs
D019	Carcinoma in situ of digestive organ, unspecified
D097	Carcinoma in situ of other specified sites
D099	Carcinoma in situ, unspecified
D120	Benign neoplasm of caecum
D121	Benign neoplasm of appendix
D122	Benign neoplasm of ascending colon
D123	Benign neoplasm of transverse colon
D124	Benign neoplasm of descending colon
D125	Benign neoplasm of sigmoid colon
D126	Benign neoplasm of colon, unspecified
D127	Benign neoplasm of rectosigmoid junction
D128	Benign neoplasm of rectum
D139	Benign neoplasm of ill-defined sites within the digestive system
D175	Benign lipomatous neoplasm of intra-abdominal organs
D1803	Haemangioma of digestive system
D1809	Haemangioma, unspecified site
D367	Benign neoplasm of other specified sites
D369	Benign neoplasm of unspecified site
D373	Neoplasm of uncertain or unknown behaviour of appendix
D374	Neoplasm of uncertain or unknown behaviour of the colon
D375	Neoplasm of uncertain or unknown behaviour of the rectum
D377	Neoplasm of uncertain or unknown behaviour of other digestive organs
D379	Neoplasm of uncertain or unknown behaviour of digestive organ, unspecified
D489	Neoplasm of uncertain or unknown behaviour, unspecified

Table 2: Colon and Rectal resection procedure codes for Cancer Surgery QBP

CCI CODE (Procedure)	CCI LONG DESCRIPTION
1NQ89SFXXG	Excision total, rectum abdominal [anterior] approach pouch formation
1NQ90LAXXG	Excision total with reconstruction, rectum using open approach with ileum [for construction of pouch]
1NQ89KZXXG	Excision total, rectum abdominoperineal approach pouch formation
1NK87DN	Excision partial, small intestine endoscopic [laparoscopic] approach Enterocolostomy anastomosis technique
1NK87RE	Excision partial, small intestine open approach Enterocolostomy anastomosis technique
1NM87DA	Excision partial, large intestine endoscopic [laparoscopic] approach Simple excisional technique
1NM87DE	Excision partial, large intestine endoscopic [laparoscopic] approach Colorectal anastomosis technique
1NM87DF	Excision partial, large intestine endoscopic [laparoscopic] approach Colocolostomy anastomosis technique
1NM87DN	Excision partial, large intestine endoscopic [laparoscopic] approach Enterocolostomy anastomosis technique
1NM87LA	Excision partial, large intestine open approach Simple excisional technique
1NM87PN	Excision partial, large intestine endoscopic [laparoscopic, laparoscopic-assisted, hand-assisted] approach robotic assisted telemanipulation of tools [telesurgery]
1NM87RD	Excision partial, large intestine open approach Colorectal anastomosis technique
1NM87RE	Excision partial, large intestine open approach Enterocolostomy anastomosis technique
1NM87RN	Excision partial, large intestine open approach Colocolostomy anastomosis technique
1NM89DF	Excision total, large intestine endoscopic [laparoscopic] approach Ileorectal [endorectal, ileoproctostomy] anastomosis technique
1NM89RN	Excision total, large intestine open approach using Ileorectal [endorectal, ileoproctostomy] anastomosis technique
1NM91DF	Excision radical, large intestine endoscopic [laparoscopic] approach Colocolostomy anastomosis technique
1NM91DN	Excision radical, large intestine endoscopic [laparoscopic] approach Enterocolostomy anastomosis technique
1NM91RD	Excision radical, large intestine open approach Colorectal anastomosis technique
1NM91RE	Excision radical, large intestine open approach Enterocolostomy anastomosis technique
1NM91RN	Excision radical, large intestine open approach Colocolostomy anastomosis technique
1NQ87CA	Excision partial, rectum perineal [e.g. pull through, transanal, sacral or sphincteric] approach closure by apposition technique [e.g.
1NQ87DA	Excision partial, rectum endoscopic [laparoscopic] approach closure by apposition technique [e.g. suturing, stapling] or no closure re
1NQ87DE	Excision partial, rectum endoscopic [laparoscopic, laparoscopic-assisted, hand-assisted] approach colorectal anastomosis technique
1NQ87DF	Excision partial, rectum endoscopic [laparoscopic] approach colorectal anastomosis technique
1NQ87LA	Excision partial, rectum open abdominal [e.g. anterior] approach closure by apposition technique [e.g. suturing, stapling] or no clousu
1NQ87PB	Excision partial, rectum perineal (e.g. pull through, transanal, sacral or sphincteric) approach colorectal anastomosis technique
1NQ87PF	Excision partial, rectum posterior [e.g. entering through incision between coccyx and anal verge with proctotomy] approach closure by
1NQ87RD	Excision partial, rectum open abdominal [e.g. anterior] approach colorectal anastomosis technique
1NQ89GV	Excision total, rectum combined endoscopic [abdominal] with perineal approach Coloanal [or ileoanal] anastomosis technique
1NQ89KZ	Excision total, rectum abdominoperineal approach Coloanal [or ileoanal] anastomosis technique

1NQ89SF	Excision total, rectum abdominal [anterior] approach Coloanal [or ileoanal] anastomosis technique
1NQ89AB	Excision total, rectum, stoma formation with distal closure, combined endoscopic [laparoscopic] abdominoperinea
1NQ89LH	Excision total, rectum abdominoperineal approach Stoma formation with distal closure
1NQ89LHXXG	Excision total, rectum abdominoperineal approach Continent ileostomy formation
1NQ89RSXXG	Excision total, rectum abdominal [anterior] approach Continent ileostomy formation
1NM91DE	Excision radical, large intestine endoscopic [laparoscopic] approach Colorectal anastomosis technique
1NM87DX	Excision partial, large intestine endoscopic [laparoscopic] approach Stoma formation and distal closure
1NM87TF	Excision partial, large intestine open approach Stoma formation with distal closure
1NM89DX	Excision total, large intestine endoscopic [laparoscopic] approach Stoma formation with distal closure
1NM91DX	Excision radical, large intestine endoscopic [laparoscopic] approach Stoma formation with distal closure
1NM91TF	Excision radical, large intestine open approach Stoma formation with distal closure
1NM87DY	Excision partial, large intestine endoscopic [laparoscopic] approach Stoma formation with creation of mucous fistula
1NM89TF	Excision total, large intestine open approach Stoma formation with distal closure
1NM91TG	Excision radical, large intestine open approach Stoma formation with creation of mucous fistula
1NM87TG	Excision partial, large intestine open approach Stoma formation with creation of mucous fistula
1NQ87TF	Excision partial, rectum open abdominal approach [e.g. anterior] stoma formation with distal closure
1NQ89RS	Excision total, rectum abdominal [anterior] approach Stoma formation with distal closure
1NM91DY	Excision radical, large intestine endoscopic [laparoscopic, laparoscopic-assisted, hand-assisted] approach stoma formation with creation of mucous fistula
1NQ87DX	Excision partial, rectum endoscopic [laparoscopic, laparoscopic-assisted, hand-assisted] approach stoma formation with distal closure
1NQ87PN	Excision partial, rectum endoscopic [laparoscopic, laparoscopic-assisted, hand-assisted] approach robotic assisted telemanipulation of tools [telesurgery]

