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QUALITY-BASED PROCEDURES CLINICAL HANDBOOK FOR GASTROINTESTINAL ENDOSCOPY

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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 Gastrointestinal (GI) Endoscopy Quality-Based Procedures (QBP).

This document has been prepared for informational purposes only. This document does not mandate healthcare 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 healthcare providers.
Introduction

The Ministry of Health (herein referred to as “the 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 healthcare services across the continuum of care. 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 healthcare 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 healthcare, 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 is 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 healthcare system. Ontario is shifting the focus of its healthcare system away from one that has primarily been healthcare provider-focused, to one that is patient-centered. The 2015 Action Plan continues to put patients at the heart of the healthcare system by being more transparent and more accountable to provide healthcare in a way that maximizes both quality and value.

HSFR comprises two key components:

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

‘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. Additionally, this approach 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 healthcare providers to become more efficient and effective in their patient management by 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.

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, QBPs were defined as “procedures.” However, as implementation evolved since the introduction of QBPs in 2012, so too has the approach. Currently, the expanded focus is on care provided in other parts of the healthcare sector with a focus on a more functional/programmatic/population-based approach. As a result, the definition of QBPs is expanding to include Quality-Based Procedures, Programs, and Populations. QBPs 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 QBPs that have the potential to improve quality of care, standardize care delivery across the province, and show increased cost efficiency.
The evidence and quality-based framework has identified QBPs that have the potential to both improve quality outcome and reduce costs.

**Cost Impact**
- Does the clinical group contribute to a significant proportion of total costs?
- Is there significant variation across providers in unit costs/volumes/efficiency?
- Is there potential for cost savings or efficiency improvement through more consistent practice?
- How do we pursue quality and improve efficiency?
- Are there potential areas for integration across the care continuum?

**Feasibility/Infrastructure for Change**
- Are there clinical leaders able to champion change in this area?
- Is there data and reporting infrastructure in place?
- Can we leverage other initiatives or reforms related to practice change (e.g. Wait Time, Provincial Programs)?

**Availability of Evidence**
- Is there clinical evidence base for an established standard of care and/or care pathway? How strong is the evidence?
- Is costing and utilization information available to inform development of reference costs and pricing?
- What activities have the potential for bundled payments and integrated care?

**Practice Variation**
- Is there variation in clinical outcomes across providers, regions and populations?
- Is there a high degree of observed practice variation across providers or regions in clinical areas where a best practice or standard exists, suggesting such variation is inappropriate?
**Impact on Transformation**
- Is this aligned with Transformation priorities?
- Will this contribute directly to Transformation system re-design?

**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.

**AVAILABILITY OF EVIDENCE**
A significant amount of research has been conducted and collected, both nationally and internationally, to help develop and guide clinical practice. Partnering with clinical experts, best practice guidelines and clinical pathways can be developed for QBPs as well as establishing 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 both the patient populations and the current care 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.

**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.

**IMPACT ON TRANSFORMATION**
The *Action Plan for Health Care* was launched in January 2012 and is already making a difference to Ontarians and our healthcare 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; and,
- We’re working with our health sector partners to improve the quality of healthcare.

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 QBPs should, where possible, align with the government’s transformational priorities. This will ensure that QBPs are wide ranging in their scope (e.g. pediatric patient populations or patients requiring
community care). QBPs with a lesser cost impact but still have a large impact on the provincial healthcare system may still be a high priority for creation and implementation.

How Will QBPs Encourage the Delivery of High-Quality, Evidence-Based Care in Healthcare 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 healthcare 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 use appropriate resources that 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.
GI Endoscopy QBP

A number of factors have contributed to the rationale behind the transformation of GI endoscopy service funding. As data from NACRS and the DAD have demonstrated, the demand for GI endoscopy procedures in Ontario has increased in recent years as a result of the aging population, growth in population size and initiatives to promote colorectal cancer screening.

The objectives of the GI Endoscopy QBP stem from the need to address practice variation and the changing nature of service delivery, while protecting and improving high-quality care. Both long-term and short-term objectives are identified in Table 1.

Table 1: GI Endoscopy QBP Short- and Long-Term Objectives

<table>
<thead>
<tr>
<th>Short-Term Objectives</th>
<th>Long-Term Objectives</th>
</tr>
</thead>
<tbody>
<tr>
<td>Establish best practice GI endoscopy services</td>
<td>Reduce practice variation and improve patient outcomes across all providers</td>
</tr>
<tr>
<td>Reduce cost variation of GI endoscopy services using pricing model based on direct costs</td>
<td>Improve cost-effectiveness of services using best practice guidelines; fund GI endoscopy service providers for providing best practice</td>
</tr>
<tr>
<td>Manage performance of GI endoscopy services through provincial, regional, and facility-level reporting</td>
<td>Improve accountability within the system for providing high quality care through performance management</td>
</tr>
<tr>
<td>Determine provincial and regional GI endoscopy activity and forecasting</td>
<td>Enable capacity planning across the region to effectively manage GI endoscopy activity and volumes</td>
</tr>
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</table>

As the GI Endoscopy QBP works towards achieving both short and long-term objectives, stakeholder engagement and collaboration is critical to ensure successful implementation of the GI Endoscopy QBP.

GI Endoscopy Funding History

Initial analysis of the current state of colonoscopy service delivery in Ontario revealed significant variation in practice and cost of services. This was the driving factor to confirm colonoscopy as a QBP in the summer of 2012. Extensive research was then conducted by a team of healthcare statisticians and case costing experts to investigate the volumes and costs of colonoscopy procedures from 114 Ontario hospitals. Through this analysis, it became apparent that separating colonoscopy procedures from other GI endoscopy services was difficult due to the way services are provided and data are captured. Multiple GI endoscopy procedures are often performed within the same episode of care to minimize patient visits and build economies of scale. As a result, in December 2012, the Ministry confirmed the expansion of the colonoscopy QBP to encompass all GI endoscopy procedures. The expanded scope provides the opportunity for greater system optimization through the implementation of high-quality standards and funding for like procedures. The evidence-based framework, as described in Section 2.2, but specific for the GI Endoscopy QBP, is outlined in Figure 2.
Cost Impact

- GI Endoscopy QBP procedures completed in hospitals account for over $120M of provincial funds each fiscal year (direct costs only; excludes professional fees)
- A substantial number of provincial colonoscopies are performed at out of hospital premises (OHPs); associated costs for these procedures were not included in the estimate of provincial funds
- Ontario Case Costing Initiative (OCCI) data is readily available for colonoscopy procedures
  - Analysis indicates variation in cost of colonoscopies across hospitals and regions
- Economies of scale exist when completing colonoscopies in conjunction with other procedures.

Availability of Evidence

- The Program in Evidence-Based Care (PEBC) published ‘Guideline for Colonoscopy Quality Assurance in Ontario’ ¹ in Fall 2013 (an update to the 2007 guideline on this topic)
- PEBC in partnership with Ontario Health (Cancer Care Ontario)¹ has published, ‘Colorectal Cancer Screening in Average Risk Populations: Evidence Summary’ ² in Fall 2015
- Through the Quality Management Partnership, the Colonoscopy Quality Management Program (QMP) has published ‘Colonoscopy Provincial Standards’ ³ (2015)
- Ontario Health (Cancer Care Ontario) published, ‘Gastroscopy Standards and Quality Indicators for Ontario’ ⁴ (2016)
- Ontario Health (Cancer Care Ontario) published, ‘ColonCancerCheck (CCC) Guide to Average Risk Screening with the Fecal Immunochemical Test (FIT) in Ontario’ ⁵ (2019)

¹ As of December 2, 2019, Cancer Care Ontario is part of Ontario Health, a new government agency that, once fully established, will be responsible for ensuring Ontarians receive high-quality health care services where and when they need them. Cancer Care Ontario’s work has been taken on by this new agency. For more information, see ontariohealth.ca.
• Ontario Health (Cancer Care Ontario) published, ‘ColonCancerCheck Recommendations for Post-Polypectomy Surveillance’6 (2019)

Feasibility/Infrastructure for Change
• Leadership forums informed the development of funding framework and supported the improvement of GI endoscopy services. These include,
  o Ontario Health (Cancer Care Ontario) GI Endoscopy Advisory Committee (disbanded)
  o Ontario Health (Cancer Care Ontario)/CPSO Quality Management Partnership Colonoscopy/Endoscopy Expert Advisory Panel (September 2013 – December 2014)
  o Gastroscopy Expert Panel (November 2014 – December 2015)
  o Ontario Colonoscopy Expert Panel (September 2012 – March 2013)
• Existing data infrastructure can be leveraged to collect and inform operational and quality indicators
  o Colonoscopy Interim Reporting Tool (CIRT) was used to collect CCC program colonoscopies between Apr 2008 and Feb 2017
  o A GI Endoscopy Data Submission Portal (DSP) reporting tool was implemented in March 2017 to collect all hospital-based colonoscopy procedures
  o OHIP Claims History Database (CHDB) for colonoscopy claims
• The QMP Colonoscopy Expert Advisory Panel, which included broad representation from the colonoscopy field, developed recommendations on the design of a colonoscopy quality management program. In fiscal year 19/20, the Quality Management Partnership’s work in colonoscopy quality management has been transitioned to the Cancer Screening program at Ontario Health (Cancer Care Ontario) and the QMP standards continue to be recognized as important measures of quality.

Practice Variation
• Data suggests variable patient outcomes exist:
  o Abnormal fecal occult blood test (FOBT) with no follow-up within six months decreased from approximately 24.0% in 2012 to 20% in 2018
  o Average provincial wait time for abnormal FOBT to colonoscopy (75th percentile) has improved from 74 days in Q2 of fiscal year 2017/18 to 70 days in Q1 of fiscal year 2019/20; however, the provincial wait time remains higher than the recommended target of 56 days

GI Endoscopy QBP Scope
The GI Endoscopy QBP encompasses all procedures reflecting GI endoscopic activity, defined by International Classification of Diseases (ICD-10-CA) procedure codes developed by the Canadian Institute for Health Information (CIHI) and used to code hospital activity in DAD and NACRS.

To define the scope of the GI Endoscopy QBP, a list of GI endoscopy codes, as identified by CIHI, were reviewed with clinical experts, and a subset of codes was removed because they were identified as unrelated to GI endoscopy. Hospitals were consulted to confirm if the in-scope activities and the costing methodology based on those codes accurately reflected GI endoscopy services in hospitals.
Since the QBP model was implemented in fiscal year 2014/15, there has been significant redesign of the model including the list of procedures considered in-scope for this QBP funding based on feedback received from experts in the field, hospital coders and CIHI. The purpose of refinements to the list of in-scope codes was to ensure that the procedures funded by the GI Endoscopy QBP are endoscopic in nature.

Since the in-scope procedure codes may change with refinements to the QBP model, an updated list of in-scope and excluded procedure codes is sent to hospitals at the start of each fiscal year, along with an updated Funding Guide and Technical Specifications document and revised SAS scripts.

Scope of Implementation
The following exclusions have been applied to the GI Endoscopy QBP funding:

Facilities:
- **Small/Medium Non-HSFR hospitals**: defined by the Ministry as a hospital with fewer than 2,700 acute and day surgery cases for any two of the prior three years.

  *(Please note that although not part of the funding component of the GI Endoscopy QBP, small hospitals will be accountable for the quality, performance and capacity management components of the QBP.)*

Procedures:
- **Pediatric cases**: Any procedure that is completed for an individual less than 18 years of age.
- **Ontario Non-OHIP activity**: Any procedure that is completed for an Ontario resident who does not have a valid Ontario Health Insurance Plan (OHIP) or where funding is provided from a source other than OHIP. (Inclusion only in cases where province issuing Health Card = “ON” and CIHI DAD/NACRS field Responsibility for Payment = “01”.)
- **Out-of-province activity**: Any procedure that is completed for a non-Ontario resident.
- **Cancelled procedures**: Any GI endoscopic procedure for a patient that is cancelled before the initiation of the scheduled procedure.
- **Abandoned procedures**: A procedure that is not completed – abandoned after onset. (Any case where CIHI DAD/NACRS Intervention status is listed as “A”.)
- **Out-of-hospital activity**: Any procedure that is performed outside of a hospital setting.
Best Practice in GI Endoscopy QBP

Overview
The surveillance and screening clinical pathways in this handbook (Figures 4 and 5) outline the patient journey from a primary care provider to a shared care setting. Recommended guidelines, developed by evaluating clinical evidence and reviewed by experts, informed these clinical pathways. In addition to clinical pathways, facility and provider best-practice standards exist to ensure that high-quality services are delivered.

GI Endoscopy Clinical Pathway
For individuals without symptoms who are eligible for screening, ColonCancerCheck (CCC)† offers recommendations for both individuals at average risk for colorectal cancer (CRC) and individuals at increased risk due to a family history (first-degree relative) of CRC (see Figure 4). A summary of these recommendations is available at: [www.cancercareontario.ca/en/guidelines-advice/cancer-continuum/screening/resources-healthcare-providers/colorectal-cancer-screening-summary](http://www.cancercareontario.ca/en/guidelines-advice/cancer-continuum/screening/resources-healthcare-providers/colorectal-cancer-screening-summary).

The CCC screening recommendations for individuals at average risk for colorectal cancer were developed using a phased approach. In the first phase, a systematic review evaluating the clinical evidence for CRC screening tests in the context of an organized, population-based screening program as well as the appropriate ages for screening initiation, cessation and intervals between CRC screening tests was completed. The summary and full report is available at: [www.cancercareontario.ca/en/guidelines-advice/types-of-cancer/2101](http://www.cancercareontario.ca/en/guidelines-advice/types-of-cancer/2101).

In the second phase, a multi-disciplinary expert panel considered the clinical evidence along with additional information such as cost-effectiveness, existing program design, public acceptability and feasibility from an organizational and economic perspective, in order to derive recommendations. The revised recommendations were therefore based on the clinical evidence and context-specific implementation considerations.

In June 2019, CCC transitioned from the guaiac fecal occult blood test (gFOBT) to the fecal immunochemical test (FIT) as the recommended screening test for people at average risk for colorectal cancer. There are a number of advantages of FIT compared with gFOBT including that FIT is more sensitive, so it is better at detecting CRC and some pre-cancerous polyps and there are no dietary restrictions. More information about the screening recommendations and CCC is available at: [www.cancercareontario.ca/en/guidelines-advice/cancer-continuum/screening/resources-healthcare-providers/colorectal-cancer-screening-summary](http://www.cancercareontario.ca/en/guidelines-advice/cancer-continuum/screening/resources-healthcare-providers/colorectal-cancer-screening-summary).

To guide best practice management of patients who are found to have colorectal polyps, the CCC, guided by a panel of experts in gastroenterology, pathology and colorectal surgery, performed a review of current guidelines as well as a focused systematic review. The resulting CCC recommendations for post-polypectomy surveillance were then validated among national and international experts in the field and can be accessed through the following link: [www.cancercareontario.ca/en/guidelines-advice/types-of-cancer/38506](http://www.cancercareontario.ca/en/guidelines-advice/types-of-cancer/38506).

CRC pathway maps have also been developed according to an iterative and multi-disciplinary process which emphasized evidence-based medicine and incorporated input from leading experts. It is

*ColonCancerCheck (CCC) is Ontario’s population-based colorectal cancer screening program. Management of the colonoscopy component of the CCC program includes performance reporting and evaluation of colonoscopies related to the follow-up of an abnormal fecal-based cancer screening test, including wait time for follow-up colonoscopy and the proportion of patients with an abnormal result who receive follow-up colonoscopy.

Figure 3: GI Endoscopy Clinical Pathway

The flowchart in Figure 3 shows the GI endoscopy clinical pathway. See outline below.

Top left box is a legend for the flow chart. See a list of acronyms below:
- **CCO** — Ontario Health (Cancer Care Ontario)
- **CRC** — Colorectal cancer
- **ERCP** — Endoscopic retrograde cholangiopancreatogram
- **EUS** — Endoscopic ultrasound
- **GI** — Gastrointestinal
- **PCP** — Primary Care Provider

Top of chart begins with “Patient visits PCP”, with a list of four possible reasons why:
1. Regular checkup by PCP
2. Evaluation of symptoms
3. Prevention of risk factors
4. Education

From here, determine one of the following:
1) If “Patient has had CRC or polyp(s) in the past, then determine:
   a. If “History of polyp(s)”,
      ▪ then “Refer to the post-polypectomy surveillance recommendations available at
        www.cancercareontario.ca/en/guidelines-advice/types-of-cancer/38506 to
determine the need for and timing of surveillance”
   b. If “History of CRC”
      ▪ then “Refer to CCO’s Colorectal Cancer Follow-up Care Pathway available at:
        www.cancercareontario.ca/sites/ccocancercare/files/assets/DPMColorectalFollow
        up.pdf to determine the type and timing of surveillance”

2) If “Asymptomatic patient is eligible for CRC screening”
   a. Then “Please refer to CCO’s Screening Pathway in Figure 4”

3) If “Patient presents with GI complaints that require evaluation. PCP evaluations and decides next
   steps” (three options)
   a. “A specialist’s opinion and/or endoscopy is needed (Shared care)”. If yes, then either:
      ▪ “Endoscopy procedure recommended
        - Proceed to endoscopy procedure as appropriate
      ▪ Endoscopy procedure not indicated
   b. “Patient is symptomatic for possible CRC”
      ▪ If yes, “Refer to CCO’s Colorectal Cancer Diagnosis Pathway: Assessment for
        Symptomatic Patients available at
        www.cancercareontario.ca/sites/ccocancercare/files/assets/DPMColorectalDiag
        nosis.pdf
        - This option has arrows to both option a. above and option c. below
   c. “A specialist’s opinion and/or endoscopy is not needed
      ▪ PCP routine care”
People at average risk of colorectal cancer who choose to be screened with a flexible sigmoidoscopy should be screened every 10 years.

The screening recommendations for people at increased risk for colorectal cancer are currently under review.

In June 2019, CCC transitioned from the guaiac fecal occult blood test (gFOBT) to the fecal immunochemical test (FIT) as the recommended screening test for people at average risk for colorectal cancer.


The flowchart in Figure 4 shows the CCC participant screening pathway. See outline below. Note that all asterisks are explained in text above.

There are two pathways; one for average risk and one for increased risk. Left pathway starts with “Average Risk***”.

1) Arrow points to “FIT***” and there are two possible results:
   a. If “Normal”, then arrow points to “Re-screen with FIT in 2 years”
   b. If “Abnormal”, then arrow points to “Colonoscopy” and there are two possible results:
      i. If “Normal”, then arrow points to “Re-screen with FIT in 10 years”
      ii. If Abnormal, then arrow points to “Referral to surgery colonoscopy surveillance or screen with FIT in 5 years***”
**Left pathway starts with “Increased Risk**.”

1) Arrow points to “Colonoscopy” and there are two possible results:
   a. If “Normal”, then arrow points to “Colonoscopy in 5 to 10 years**”
   b. If Abnormal, then arrow points to “Referral to surgery colonoscopy surveillance****”

Defining GI Endoscopy Facility and Provider Best-Practice Standards

Facility best-practice standards identify minimum requirements related to the environment in which GI endoscopy procedures are conducted including equipment, staffing and structural space. Provider best-practice standards focus on training, competency and privileges, as well as best practice for completing the procedure (pre-procedure, intra-procedure, and post-procedure standards).

Colonoscopy provider and facility standards were developed and endorsed by the Colonoscopy QMP Expert Advisory Panel consisting of a broad representation of experts from the field of colonoscopy. In fiscal year 19/20, the Quality Management Partnership’s work in colonoscopy quality management transitioned to the Cancer Screening program at Ontario Health (Cancer Care Ontario)\(^2\) and the QMP standards continue to be recognized as important measures of quality.

Gastroscopy provider and facility standards were developed by a Gastroscopy Expert Panel consisting of experts in gastroenterology, general surgery and thoracic surgery based on a systematic search on guidelines on esophagogastroduodenoscopy.

Additional best-practice standards for other areas of GI endoscopy will be included in future versions of this handbook as they are currently being developed.

GI Endoscopy Best Practice Standards

The facility best-practice standards originally developed by the Ontario Colonoscopy Expert Panel have been revised to leverage recommendations in the *Guideline for Colonoscopy Quality Assurance in Ontario*\(^1\) as well as the *Out-of-Hospital Premises Inspection Program, Program Standards*\(^7\). Facility best-practice standards identify minimum requirements related to the environment in which GI endoscopy procedures are conducted including equipment, staffing and structural space.

These standards, endorsed by the Colonoscopy QMP Expert Advisory Panel in 2014, are:

- Facilities must adhere to professional and/or institutional standards for granting and renewing privileges.
- Facilities must establish and implement a standard pre-procedural assessment process.
- For colonoscopy procedures, facilities must offer sedation unless the endoscopist judges this to be contraindicated, and have necessary infrastructure for safe sedation (i.e., recovery room and monitoring). Patient must be aware that they have the right to refuse sedation if they so desire.
- During endoscopy under moderate sedation, the nurse may perform interruptible tasks, such as assisting with biopsy or polypectomy while continuing to actively monitor the patient, provided the patient is stable. For deep sedation, an individual trained to monitor patients must also be present in the room with no other responsibilities.

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\(^2\) As of December 2, 2019, Cancer Care Ontario is part of Ontario Health, a new government agency that, once fully established, will be responsible for ensuring Ontarians receive high-quality health care services where and when they need them. Cancer Care Ontario’s work has been taken on by this new agency. For more information, see [ontariohealth.ca](http://ontariohealth.ca).
Caveat for QBP as it relates to nursing care: all nurses must have Basic Cardiac Life Support (BCLS) training, and each facility must have either 1) a hospital code team or 2) within a community based setting, ≥ 2 Advanced Cardiovascular Life Support (ACLS) certified persons on location, when clinical care with sedation is provided

- Facilities must ensure continuous and appropriate monitoring of patients receiving conscious or deep sedation before, during and after administration of sedation.
- Facilities must establish and implement a general plan for resuscitation, including the identification of properly trained personnel.
- Facilities must determine readiness for discharge using an acceptable scoring system (e.g., Aldrete score, Post-Anaesthetic Discharge Scoring (PADS), etc.).
- Facilities must establish and implement a clear discharge process, including but not limited to, when to discharge patients, follow up on results and provide instructions in the event of complications.
- Facilities must provide all patients with a post-procedure follow-up plan.
- Facilities must establish a quality assurance program in which complications and important quality metrics are monitored, reported to endoscopists and remediated when necessary (examples of quality metrics include cecal intubation rate, bowel preparation quality and polyp detection rate).
- Only equipment of a high standard that conforms to current safety and work practice standards/guidelines and provides for optimal individual procedures is used. This is to be achieved by ensuring that:
  - All equipment used performs at optimal level;
  - All equipment is subject to the manufacturers’ recommended preventative maintenance programs and is tested according to technical specifications by qualified technicians;
  - All equipment is subject to compliance testing and certification where required by jurisdictional statutory regulations;
  - Industry norms in the selection or replacement of appropriate equipment are adhered to, including with technological advancement and replacing equipment where necessary to maintain an up-to-date and high standard of service;
  - All equipment is subject to a regular quality control program; and the equipment required for the performance of a particular procedure is readily accessible.
- Facilities must use automated endoscopic re-processors for all procedures.
- Facilities must have appropriate re-processing capacity (i.e., appropriate ratio of basins to procedure volume).
- Facilities must have appropriate supplies for providing safe endoscopy (e.g., intravenous fluid, setup, supplies and suction systems).
- Facilities must have resuscitation equipment immediately available, including but not limited to a defibrillator, endotracheal tubes, airways, laryngoscope, and oxygen sources with positive-pressure capabilities, emergency drugs, and oxygen tanks.
- Facilities must have the appropriate equipment to remove polyps and to manage related complications (e.g., post polypectomy bleeding) which must include at a minimum hemoclips, injectors, polypectomy snares, biopsy forceps, electrocautery equipment, and tattooing ink.
Hospitals must be accredited and must meet comparable standards to Independent Health Facilities / Out-of-Hospital Premises where applicable.

In 2014/15, the Early Quality Initiatives (EQIs) – Quality Improvement Resource (QIR) Package for Endoscopy/Colonoscopy was developed to include four QIRs for endoscopy/colonoscopy providers. This work was based on the above recommendations from the Colonoscopy QMP Expert Advisory Panel. The package is available at: [qmp.ccohealth.ca/sites/cqco/files/assets/ColoQMP-QIResources-Background-ResourceSummary.pdf](http://qmp.ccohealth.ca/sites/cqco/files/assets/ColoQMP-QIResources-Background-ResourceSummary.pdf).

In addition, for medical equipment and device standards, facilities should adhere to Public Health Ontario’s recommendations and best practices for education and management of medical equipment and devices found here:

1) *Best Practices for Cleaning, Disinfection and Sterilization of Medical Equipment/Devices*
   - GI endoscopy-specific recommendations can be found on pages 44 to 49 of the above document.

2) *Recommendations for Education, Training and Certification for Reprocessing in Clinical Office Settings*
   - GI endoscopy-specific recommendations can be found on page 4 of the above document.

Colonoscopy Best-Practice Standards
Colonoscopy standards recommended in the *Guideline for Colonoscopy Quality Assurance in Ontario*\(^1\) provide the evidence for the quality component of the QBP for colonoscopy. This guideline was developed by Ontario Health (Cancer Care Ontario) and the PEBC, an internationally recognized guideline development program, which worked with an expert panel that included gastroenterologists and general surgeons. The guideline summarizes the available evidence on colonoscopy quality assurance and makes evidence-based recommendations on standards for three key aspects of colonoscopy: training and maintenance of competency for physician endoscopists, institutional quality assurance parameters and performance indicators for colonoscopy. While the guideline is currently being updated, more information on the current guideline can be found here: [www.cancercareontario.ca/en/guidelines-advice/types-of-cancer/2111](http://www.cancercareontario.ca/en/guidelines-advice/types-of-cancer/2111).

In 2015, the Colonoscopy QMP Expert Advisory Panel published its recommendations on facility standards that will ensure consistent, high quality care for colonoscopy across Ontario. For additional guidance on colonoscopy facility standards, facilities can refer to the Colonoscopy QMP standards here: [qmp.ccohealth.ca/sites/cqco/files/assets/ProvincialQMP-Report.pdf](http://qmp.ccohealth.ca/sites/cqco/files/assets/ProvincialQMP-Report.pdf).

In addition, in view of the increased complexity of colonoscopies performed in patients with an abnormal FIT result, the CCC program has released the *Fecal Immunochemical Test (FIT)-Positive Colonoscopy: Facility-Level Guidance*, which is available at: [www.cancercareontario.ca/sites/ccocancercare/files/assets/H-FIT_Guidance.pdf](http://www.cancercareontario.ca/sites/ccocancercare/files/assets/H-FIT_Guidance.pdf).
Gastroscopy Best-Practice Standards
Provider and facility level standards for gastroscopy were developed based on a systematic search of guidelines and informed by a Gastroscopy Expert Panel that included gastroenterologists, general surgeons and thoracic surgeons. Provider standards include recommendations for training and maintenance of competency as well as quality standards for before, during and after the procedure. Facility standards incorporate standards around equipment, sedation, medication and special considerations for GI bleeding, as well as, institutional quality assurance parameters. These standards are summarized in the Gastroscopy Standards and Quality Indicators for Ontario document available under the Gastroscopy Standards section at: www.cancercareontario.ca/en/guidelines-advice/types-of-cancer/53631.

Implementation of Best Practices
Implementation of the GI Endoscopy QBP will impact the spectrum of health service delivery personnel from healthcare administrators to front-line clinicians. The following section outlines potential challenges GI endoscopy service providers may face as a result of the implementation and provides recommendations to assist in the delivery of GI Endoscopy QBP best practices.

Potential Challenges – Changes in Funding:
Changes in funding levels may drive providers to find cost efficiencies in order to support current activities and future increases in volumes, which providers may find challenging.

Recommended Mitigation Opportunities
Implementation of the GI Endoscopy QBP offers an opportunity to revisit processes to ensure the delivery of high-quality, cost-effective care. Review of the following areas can help to increase the efficiency of GI endoscopy processes:

- **Staffing levels:** Reviewing clinical staffing levels to better align with capacity needs can ensure patient flow is not interrupted by staff breaks and reduce the need for staff overtime. Efficiencies can also be achieved by re-examining the staffing complement of physicians, registered nurses (RNs) and registered practical nurses (RPNs) to better support pre-procedure, intra-procedure and post-procedure activities that align with QBP best practices.

- **Day of exam processes:** Process bottlenecks can be minimized through improvements to the physical layout of procedure areas. Ensuring that all necessary equipment is located in the right place and easily available can reduce delays. Departments can aim to maximize equipment use, to satisfy procedure demands. In addition, opportunities may exist to improve procedure room utilization by ensuring booked procedure times are aligned to actual procedure time requirements. As facilities work to improve processes, it is valuable to engage all staff in the identification of areas of opportunity and the development of solutions.

- **Standard processes that support best practice:** Opportunities to further enhance current practice may be realized by leveraging lessons learned from providers within a given region. Engaging in an open dialogue with providers in the area or third party quality audits can help to standardize processes that support best practices.

- The EQI QIR Package for Endoscopy/ Colonoscopy (which is available at qmp.ccohealth.ca/sites/cqco/files/assets/ColoQMP-QIRResources-Background-ResourceSummary.pdf) includes other valuable guidance to improve efficiency and quality of care in the unit, as follows: 1) bowel preparation selection best practice guideline; 2)
standardized endoscopy reporting guidelines; 3) standardized patient discharge guidelines for endoscopy facilities and 4) pre and post procedure guidelines and checklists for endoscopy facilities.

- **GI Endoscopy QBP Management Tool**: This highly interactive tool will support hospitals in identifying cost efficiencies by comparing hospital-specific costs to provincial costing benchmarks for colonoscopy and gastroscopy procedures. Hospitals can contact the Screening Inbox (screening@cancercare.on.ca) to obtain a copy of the GI Endoscopy QBP Management Tool.

**Potential Challenges – Implementation of best-practice standards:**

The GI Endoscopy QBP has adopted recommendations for provider best-practice standards as described in Section 4. Clinicians and facility administrators should work to uphold provider and facility level best practices that include, but are not limited to, new technology/equipment standards and patient preparation expectations. This also includes the ability to meet operational indicators (e.g. minimum annual volume requirements) and quality indicators (e.g. inadequate bowel preparation).

**Recommended Mitigation Strategies**

- **Support from Regional Vice Presidents**: Through the Regional Cancer Programs (RCPs), Regional Vice Presidents (RVPs) will play a pivotal role in the implementation of performance management monitoring and evaluation. Hospitals should work closely with RVPs to discuss performance results and opportunities for improvement within their hospitals, as RVPs will have insights into practices and lessons learned from across the province.

- **Support from Regional Colorectal Screening / GI Endoscopy Leads**: As of fiscal year 2014/15, 13 Regional Colorectal Screening / GI Endoscopy Leads were positioned across Ontario. They play a critical role in influencing the quality, safety and accessibility of colorectal cancer screening and GI endoscopy services. These individuals are clinical leaders who provide advice and support for the GI Endoscopy QBP and the ColonCancerCheck program. Endoscopists are encouraged to work with their regional lead to improve the quality of GI endoscopy in their region.

- **Review and discuss quality reports**: Various quality reports are disseminated at the regional, facility, and physician level. These reports highlight areas of strength and opportunities for quality improvement. The reports are intended to drive discussions on quality at the level of both the facility and individual endoscopists; some are accompanied by quality improvement reference documents to support the development of action plans.

- **Leverage endoscopy unit leadership**: Leadership at each individual GI endoscopy unit should be leveraged to provide guidance and strategies to ensure implementation of best-practice procedures.

- **Training and upskilling**: To ensure maintenance of skills or develop additional areas of GI endoscopy clinical competency, endoscopists should attend continuing medical education sessions and train-the-trainer or up-skilling courses. For instance, the Canadian Association of Gastroenterology provides a “Skills Enhancement for Endoscopy” program for clinicians to continue their skill development available here: www.cag-acg.org/skills-enhancement-for-endoscopy.

**Implementation of Best-Practice Pricing**

As of fiscal year 2018/19, Ontario Health (Cancer Care Ontario) funds hospitals based on best-practice prices for colonoscopy, gastroscopy and biopsy procedures, reflecting clinical expert consensus for
practice and efficient hospital operations. The best-practice price is based on the cost of caring for a typical (“average”) patient, including all necessary resources to perform the procedures safely and effectively, while not providing funding for over provision of care or inefficient hospital practices. More information on how funding rates for colonoscopy, gastroscopy and biopsy procedures established in Ontario reflect best practices can be found here: www.ncbi.nlm.nih.gov/pmc/articles/PMC6476446/.

How Does GI Endoscopy 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 standardized 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.

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.

Will This Change Current Practice?
For many clinicians, the implementation of the GI Endoscopy QBP will have minimal impact on their current clinical practices. However, some changes may be required to align with best-practice standards such as implementation of performance monitoring or participation in GI endoscopy training. In addition, clinicians should ensure their endoscopy report includes the data elements necessary for the QBP allocation process.

In addition, facilities may need to alter current data collection and reporting practices and processes for quality improvement/assurance, to adhere to QBP reporting requirements, which will be critical for monitoring and measuring system-wide quality improvements.
Service Capacity Planning

In 2014, Ontario Health (Cancer Care Ontario) increased its scope of responsibility from the CCC program to include the GI Endoscopy QBP. With regard to colonoscopies, the CCC program focuses on the follow-up of abnormal fecal immunochemical test (FIT) results and screening those at increased risk of colorectal cancer. The QBP involves the continuous development of a funding model and the provision of oversight for the quantity and quality of GI endoscopy services across Ontario.

Ontario Health (Cancer Care Ontario) leverages the current infrastructure of the RCPs and is committed to supporting the GI Endoscopy QBP. The RCPs provide oversight through annual allocation forecasts, quality improvement and regular performance management. In addition to the RCP infrastructure, predictive modeling work developed within Ontario Health (Cancer Care Ontario) supports future capacity planning.

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3 In June 2019, CCC transitioned from the guaiac fecal occult blood test (gFOBT) to the fecal immunochemical test (FIT) as the recommended screening test for people at average risk for colorectal cancer.
Performance Evaluation and Feedback

Quality Assurance Program
All providers should meet quality standards and ensure GI endoscopy procedures are completed safely. In 2014, the Quality Management Partnership was established and was responsible for the development and implementation of QMPs for multiple health service areas, including colonoscopy. The Colonoscopy QMP Expert Advisory Panel developed recommendations for:

1. A quality framework that sets out an integrated set of performance standards and quality measures at the provider, facility and regional/system levels.
2. An integrated data gathering infrastructure, generating performance reports linked to evidence-informed quality improvement opportunities and based on rigorous health analytics to review data.
3. Organized, peer-led approaches to performance improvement programs, and processes.
4. Quality improvement processes for providers, facilities and regions.
5. Changes to healthcare system design in Ontario that may be required to support comprehensive quality management.

The work of the colonoscopy QMP has transitioned to the Cancer Screening program at Ontario Health (Cancer Care Ontario). The GI Endoscopy QBP has leveraged the Colonoscopy QMP deliverables, such as provincial standards and quality indicators identified in the quality framework. In addition, quality assurance elements in the CCC program, including wait time indicators, will continue to be used for non-HSFR hospitals participating in the colonoscopy component of the CCC program and has been expanded to all hospitals funded through the QBP.

Performance Management Framework Overview
Key long-term objectives of the GI Endoscopy QBP are to improve the quality and cost-effectiveness of GI endoscopy services in Ontario through a reduction in practice variation and improved patient outcomes.

To support these objectives, Ontario Health (Cancer Care Ontario) selects quality indicators based on evidence, the availability of quality data and data collection infrastructure. Performance management and evaluation currently focuses on colonoscopy procedures. However, the plan may expand to include other GI endoscopy procedures (such as gastroscopy) as best-practice standards, quality indicators and data infrastructure are developed.

Implementation of performance reporting ensures that outcomes and accountability for best practices improve over time across the system. Currently, Ontario Health (Cancer Care Ontario) has a performance reporting mechanism in place with all GI endoscopy hospitals to ensure regular monitoring and evaluation of the colonoscopy quality indicators. These indicators are reported on a regular basis to each of the RCPs. The indicators are intended to be used by RCPs and hospitals to build a culture of quality improvement. In addition, Regional Colorectal Screening / GI Endoscopy Leads play a role in reviewing performance with hospitals in their regions. Together, RVPs, Regional Colorectal Screening / GI Endoscopy Leads and Ontario Health (Cancer Care Ontario)'s provincial clinical leadership work together with facilities across Ontario to identify opportunities for improvement.

In February 2018, Ontario Health (Cancer Care Ontario) released the CCC & GI Endoscopy Report (formerly the Integrated GI Endoscopy Report). This report presents select colonoscopy quality indicators relevant to the GI Endoscopy QBP and the CCC program in one document. The CCC & GI
Endoscopy Report is released monthly, with results shown at the provincial, regional and facility levels. The data for the “Outpatient hospital-based colonoscopy volumes by indication” indicator is refreshed monthly, and is submitted by hospitals that perform colonoscopy using data submitted by hospitals to the GI Endoscopy Data Submission Portal (an Ontario Health (Cancer Care Ontario) data submission tool). All other data in the report is refreshed quarterly. The report serves as a quality improvement tool to enable RCPs to monitor performance and identify key areas of focus to drive quality improvement. The report may be used for discussion during performance review meetings as a way to identify any performance issues or quality gaps and inform improvement. See Section 7 for more information about the items reported and additional detail about the CCC & GI Endoscopy Report. Further information or inquiries can be directed to the Screening inbox at screening@cancercare.on.ca.
GI Endoscopy Quality Indicators and Improvement

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 indicator matrix is based on the following guiding principles:

- **Relevance** – the matrix should accurately measure the response of the system to introducing QBPs
- **Importance** – to facilitate improvement, the indicators should be meaningful and actionable for all potential stakeholders (patients, clinicians, administrators, Local Health Integration Networks and the Ministry)
- **Alignment** – the matrix 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)

Ontario Health (Cancer Care Ontario) will incorporate quality indicators into the performance management process/cycle at the regional and hospital level. Quality assurance programs are expected to be in place at all hospitals, to monitor and improve the quality of GI endoscopy services.

Performance management for the GI Endoscopy QBP focuses on the quality of colonoscopy procedures given the current availability of guidelines on colonoscopy quality assurance, clinical practice algorithms, and performance reporting infrastructure at Ontario Health (Cancer Care Ontario). Colonoscopy indicators are currently reported through the CCC & GI Endoscopy Report. The rationale, definition, denominator, numerator and data sources for each colonoscopy indicator are provided within the tables below.

**Effectiveness Indicators**

**Table 1: Inadequate bowel preparation**

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Inadequate bowel preparation</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Rationale</strong></td>
<td>Proper bowel preparation is important as it is associated with higher colonoscopy completion rates and adenoma detection rates. It is also a determinant of efficiency in the endoscopy unit.</td>
</tr>
<tr>
<td><strong>Definition</strong></td>
<td>Percentage of outpatient colonoscopies with poor bowel preparation</td>
</tr>
<tr>
<td><strong>Denominator</strong></td>
<td>Number of outpatient colonoscopies performed during the reporting period</td>
</tr>
<tr>
<td><strong>Numerator</strong></td>
<td>Number of outpatient colonoscopies with poor bowel preparation</td>
</tr>
</tbody>
</table>
**Table 2: Percentage of colonoscopies performed by endoscopists meeting volume standard**

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Percentage of colonoscopies performed by endoscopists meeting volume standard</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rationale</td>
<td>There is evidence that endoscopists who perform low volumes may be more likely to have higher rates of colonoscopy complications(^{10-13}). The ‘Guideline for Colonoscopy Quality Assurance in Ontario’(^{1}), recommends that endoscopists perform a minimum of 200 colonoscopies per year. Despite the stated volume threshold, individual endoscopists may require more or fewer procedures to maintain competency. As a result, it is recommended that the volumes are considered in conjunction with other quality measures such as cecal intubation rate or polypectomy rate in cases where the minimum volume is not met.</td>
</tr>
<tr>
<td>Definition</td>
<td>Percentage of colonoscopy procedures completed by endoscopists who have performed 200 or more colonoscopies.</td>
</tr>
<tr>
<td>Denominator</td>
<td>Number of inpatient and outpatient colonoscopies performed in the reporting period</td>
</tr>
<tr>
<td>Numerator</td>
<td>Number of inpatient and outpatient colonoscopy procedures performed by endoscopists who have performed 200 or more colonoscopies in total in the reporting period.</td>
</tr>
</tbody>
</table>
| Data Sources | - OHIP’s CHDB – colonoscopy claims  
- CIHI DAD/NACRS – inpatient/outpatient colonoscopy and hospital location  
- RPDB (Registered Persons Database) – patient demographics  
Reported at the hospital and OHP-level |

*Colonoscopies performed both in hospitals and in out-of-hospital premises are included when determining if the endoscopist meets the volume threshold*
**Table 4: Post-polypectomy bleeding**

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Post-polypectomy bleeding</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rationale</td>
<td>Post-polypectomy bleeding is a complication of colonoscopy which generally results in hospitalization. This complication leads to higher costs and use of resources, and adversely affects the patient experience. Cases of post-polypectomy bleeding can be reviewed in order to identify opportunities for improvement.</td>
</tr>
<tr>
<td>Definition</td>
<td>Percentage of outpatient colonoscopies with polypectomy followed by hospital admission for lower gastrointestinal bleeding within 14 days of colonoscopy</td>
</tr>
<tr>
<td>Denominator</td>
<td>Number of outpatient colonoscopies where ≥1 polyp(s) were removed in the reporting period</td>
</tr>
<tr>
<td>Numerator</td>
<td>Number of outpatient colonoscopies with polypectomy followed by hospital admission for lower gastrointestinal bleeding within 14 days of colonoscopy</td>
</tr>
</tbody>
</table>
| Data Sources | - OHIP’s CHDB – colonoscopy claims  
- CIHI DAD/NACRS – inpatient/outpatient colonoscopy and hospital location  
- CIHI DAD – perforation related hospital admissions and colorectal cancer diagnoses  
- RPDB – patient demographics  
- OCR (Ontario Cancer Registry) – resolved invasive colorectal cancers  
Reported at the hospital and OHP-level |

**Table 5: Outpatient polypectomy**

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Outpatient polypectomy (stratified by sex)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rationale</td>
<td>This indicator provides information on whether polyps were identified and removed at the time of colonoscopy (unlike adenoma detection, which requires pathologic confirmation), and is captured using health administrative data. Low polyp detection rate has been shown to be associated with more post-colonoscopy colorectal cancer (PCCRC).</td>
</tr>
<tr>
<td>Definition</td>
<td>Percentage of outpatient colonoscopies during which ≥1 polyp(s) were removed</td>
</tr>
<tr>
<td>Denominator</td>
<td>Number of outpatient colonoscopies</td>
</tr>
<tr>
<td>Numerator</td>
<td>Number of outpatient colonoscopies during which ≥1 polyp(s) were removed</td>
</tr>
<tr>
<td>Indicator</td>
<td>Outpatient polypectomy (stratified by sex)</td>
</tr>
<tr>
<td>-----------</td>
<td>------------------------------------------</td>
</tr>
<tr>
<td><strong>Data Sources</strong></td>
<td></td>
</tr>
<tr>
<td>• OHIP’s CHDB – colonoscopy claims</td>
<td></td>
</tr>
<tr>
<td>• CIHI DAD/NACRS – inpatient/outpatient colonoscopy and hospital location</td>
<td></td>
</tr>
<tr>
<td>• RPDB – patient demographics</td>
<td></td>
</tr>
<tr>
<td>• OCCC (Ontario Crohn’s and Colitis Cohort) – patients with IBD</td>
<td>Reported at the hospital and OHP-level</td>
</tr>
</tbody>
</table>

**Table 6: Colorectal cancer detection**

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Colorectal cancer detection</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Rationale</strong></td>
<td>Colonoscopy is the gold standard for the diagnosis of colorectal cancer (CRC)(^3), an indicator of the yield of the procedures performed, and it helps interpret the PCCRC.</td>
</tr>
<tr>
<td><strong>Definition</strong></td>
<td>Percentage of outpatient colonoscopies followed by CRC detection within 6 months of colonoscopy in individuals over age 50</td>
</tr>
<tr>
<td><strong>Denominator</strong></td>
<td>Number of outpatient colonoscopies performed on individuals age 50 and older in the reporting period</td>
</tr>
<tr>
<td><strong>Numerator</strong></td>
<td>Number of outpatient colonoscopies performed on individuals age 50 and older followed by CRC detection within 6 months of colonoscopy</td>
</tr>
<tr>
<td><strong>Data Sources</strong></td>
<td></td>
</tr>
<tr>
<td>• OCR – resolved invasive colorectal cancers</td>
<td></td>
</tr>
<tr>
<td>• RPDB – patient demographics</td>
<td></td>
</tr>
<tr>
<td>• OHIP’s CHDB – colonoscopy claims</td>
<td></td>
</tr>
<tr>
<td>• CIHI DAD/NACRS – inpatient/outpatient colonoscopy and hospital location</td>
<td>Reported at the hospital and OHP-level</td>
</tr>
</tbody>
</table>

**Table 7: Post-colonoscopy colorectal cancer**

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Post-colonoscopy colorectal cancer</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Rationale</strong></td>
<td>“This indicator captures the occurrence of new or missed colorectal cancer (CRC) diagnosed after colonoscopy”(^3), and is a widely recognized “quality indicator for colonoscopy. It is often defined as the proportion of persons with CRC who underwent a colonoscopy within 6 to 36 months prior to the diagnosis of CRC (those with a colonoscopy within 6 months of diagnosis are considered to be detected cancers). Possible reasons for a post-colonoscopy CRC include missed lesions, incomplete removal of adenomas, and new rapidly growing lesions”(^3).</td>
</tr>
<tr>
<td><strong>Definition</strong></td>
<td>Percentage of outpatient colonoscopies negative for CRC followed by CRC diagnosis within 6 to 36 months of colonoscopy</td>
</tr>
<tr>
<td><strong>Denominator</strong></td>
<td>Total number of outpatient colonoscopies negative for CRC in the reporting period</td>
</tr>
<tr>
<td><strong>Numerator</strong></td>
<td>Number of outpatient colonoscopies negative for CRC followed by CRC diagnosis within 6 to 36 months of colonoscopy</td>
</tr>
<tr>
<td><strong>Data Sources</strong></td>
<td></td>
</tr>
<tr>
<td>• OCR – resolved invasive colorectal cancers</td>
<td></td>
</tr>
<tr>
<td>• RPDB – patient demographics</td>
<td></td>
</tr>
</tbody>
</table>
### Appropriateness Indicators

**Table 8: Percentage of outpatient colonoscopies with recent normal findings**

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Percentage of outpatient colonoscopies with recent normal findings</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Rationale</strong></td>
<td>It is well recognized that there is both underutilization and overutilization of colonoscopy. It is expected that only a minority of patients would have a repeat colonoscopy within 3 years of a complete and normal colonoscopy. Endoscopists who perform a high proportion of colonoscopies in patients with recent normal and complete colonoscopies relative to their peers should review their practice to ensure that it is within recommended guidelines\textsuperscript{16}.</td>
</tr>
<tr>
<td><strong>Definition</strong></td>
<td>Percentage of Ontario individuals, 53 years old or older, who had a normal and complete outpatient colonoscopy in the 36 months prior to the index colonoscopy</td>
</tr>
<tr>
<td><strong>Denominator</strong></td>
<td>Number of individuals, 53 years old or older, who had an outpatient colonoscopy in the reporting period</td>
</tr>
<tr>
<td><strong>Numerator</strong></td>
<td>Number of individuals, 53 years old or older, who had a normal and complete outpatient colonoscopy in the 36 months prior to the index colonoscopy</td>
</tr>
</tbody>
</table>
| **Data Sources**| • OHIP’s CHDB – colonoscopy claims  
• CIHI DAD/NACRS – inpatient/outpatient colonoscopy and hospital location  
• OCR – resolved invasive colorectal cancers  
• RPDB – patient demographics  
• OCCC (Ontario Crohn’s and Colitis Cohort) – patients with IBD  
Reported at the hospital and OHP-level |

**Table 9: Percentage of colonoscopies with anesthesiologist assistance**

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Percentage of colonoscopies with anesthesiologist assistance</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Rationale</strong></td>
<td>The increase in use of anesthesiologist assistance (AA) to achieve deep sedation with propofol during colonoscopy has significantly increased colonoscopy costs without evidence for increased quality and with possible harm\textsuperscript{17}.</td>
</tr>
<tr>
<td><strong>Definition</strong></td>
<td>Percentage of outpatient colonoscopies performed with the assistance of an anesthesiologist</td>
</tr>
<tr>
<td><strong>Denominator</strong></td>
<td>Number of outpatient colonoscopies</td>
</tr>
<tr>
<td><strong>Numerator</strong></td>
<td>Number of outpatient colonoscopies performed with the assistance of an anesthesiologist</td>
</tr>
<tr>
<td>Indicator</td>
<td>Percentage of colonoscopies with anesthesiologist assistance</td>
</tr>
<tr>
<td>-----------</td>
<td>-------------------------------------------------------------</td>
</tr>
</tbody>
</table>
| Data Sources | • OHIP’s CHDB – colonoscopy and anesthesia claims  
• CIHI DAD/NACRS – inpatient/outpatient colonoscopy and hospital location  
• RPDB – patient demographics  
Reported at the hospital level |

**Access Indicators**

**Table 10: Abnormal fecal test with no follow-up within six months**

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Abnormal fecal test with no follow-up within six months</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rationale</td>
<td>“People with abnormal fecal test results must receive timely and appropriate follow-up in the form of colonoscopy to assess whether or not cancer is present”(^3).</td>
</tr>
<tr>
<td>Definition</td>
<td>Percentage of Ontario screen-eligible individuals with an abnormal fecal test result who did not undergo colonoscopy within six months of the abnormal fecal test result</td>
</tr>
<tr>
<td>Denominator</td>
<td>Number of Ontario screen-eligible individuals, 50 to 74 years old, with an abnormal CCC program fecal test result in the reporting period</td>
</tr>
<tr>
<td>Numerator</td>
<td>Number of Ontario screen-eligible individuals, 50 to 74 years old, with an abnormal fecal test result in the reporting period, who did not undergo colonoscopy within six months of the abnormal result</td>
</tr>
</tbody>
</table>
| Data Sources | • LRT (Laboratory Reporting Tool) – CCC FOBTs  
• OHIP’s CHDB – colonoscopy claims  
• CIRT – CCC program colonoscopy records  
• GI Endo DSP – hospital colonoscopy  
• OCR – resolved invasive colorectal cancers  
• RPDB – patient demographics  
• PCCF+, version 6C - residence information  
Reported at the hospital level |

**Table 11: Abnormal fecal test to colonoscopy wait time in days**

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Abnormal fecal test to colonoscopy wait time in days (75th percentile)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rationale</td>
<td>The Canadian Association of Gastroenterology (CAG) has published a Canadian consensus on medically acceptable wait times(^14), and has set benchmarks that recommend a colonoscopy be completed within two months for those with an abnormal fecal test. Ontario Health (Cancer Care Ontario)’s CCC program has adopted this benchmark. This indicator measures follow-up among all individuals who had an abnormal fecal test and colonoscopy within six months. A six-month window is used as colonoscopies performed more than six months after an abnormal screen date may have been performed for a different indication(^3).</td>
</tr>
<tr>
<td>Indicator</td>
<td>Abnormal fecal test to colonoscopy wait time in days (75th percentile)</td>
</tr>
<tr>
<td>-----------</td>
<td>---------------------------------------------------------------</td>
</tr>
<tr>
<td><strong>Definition</strong></td>
<td>75th percentile wait time in days between an abnormal fecal test and a follow-up colonoscopy for Ontario screen-eligible individuals, 50 to 74 years old, who had an abnormal fecal test result and follow-up colonoscopy within six months.</td>
</tr>
<tr>
<td><strong>Cohort</strong></td>
<td>Total number of Ontario screen-eligible individuals, ages 50 to 74, who had an abnormal CCC program fecal test result and follow-up colonoscopy in hospital within six months of an abnormal fecal test result</td>
</tr>
</tbody>
</table>
| **Data Sources** | - LRT – CCC FOBTs  
- OHIP’s CHDB – colonoscopy claims  
- CIRT – CCC program colonoscopy records  
- GI Endo DSP – hospital colonoscopy  
- OCR – resolved invasive colorectal cancers  
- RPDB – patient demographics  
- CIHI DAD/NACRS – hospital location  
Reported at the hospital and OHP-level |

**GI Endoscopy QBP Indicator Development Plan**

Ontario Health (Cancer Care Ontario) will continue to work with its expert panels to include additional indicators for other GI endoscopy procedures to the suite of performance indicators. As indicator data are collected and reviewed, indicators may be retired if it is determined that they no longer meet the objectives of the GI Endoscopy QBP.
Support for Change

Ontario Health (Cancer Care Ontario) will provide input on the overarching HSFR strategy for system change, and specifically, manage the changes related to GI endoscopy service delivery.

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.
Frequently Asked Questions
The GI Endoscopy QBP team has responded to a number of inquiries throughout the QBP development. The most frequently asked and relevant questions (FAQs) have been documented below and are categorized into the following sections:

- Ontario Health (Cancer Care Ontario) and Scope of the GI Endoscopy QBP
- Funding through the QBP
- Cancer Screening Programs in Relation to the QBP

Ontario Health (Cancer Care Ontario) and Scope of the GI Endoscopy QBP

**Is anesthesia in-scope for the GI Endoscopy QBP?**

Ontario Health (Cancer Care Ontario) has recognized that the use of anesthesia in GI endoscopy is a complex issue with various cost implications for both hospitals and the healthcare system, depending on whether a nurse versus anesthetist staffing model is implemented. Currently, the GI Endoscopy QBP Funding Model includes the direct costs associated with anesthesia. The GI Endoscopy QBP work plan includes the development of best practice for sedation within GI endoscopy procedures. This will include reviewing the overall use of anesthesia for procedures and the associated staffing complement.

**Can you explain and provide examples of procedures that are out-of-scope for this QBP?**

The GI Endoscopy QBP only funds procedures that are endoscopic in nature. Procedures that are not gastrointestinal in nature are out of scope; this includes procedures related to the bladder, lungs, urethra, prostate and kidneys that may occur in the GI endoscopy suite.

For example, the endobronchial ultrasound (EBUS) procedures were originally in-scope for the GI Endoscopy QBP. As of fiscal year 2019/20, all EBUS procedures were removed from the GI Endoscopy QBP.

Any procedure code that is not included in the in-scope procedure list is considered out-of-scope for this QBP. Since the in-scope procedure codes may change with refinements to the QBP model, an updated list of in-scope and excluded procedure codes is sent to hospitals at the start of each fiscal year, along with an updated Funding Guide and Technical Specifications document and revised SAS scripts.

Funding Through the QBP

**Are hospitals funded for volumes over and above their allocation?**

The total funding allocation for GI Endoscopy QBP is provided to hospitals via allocation packages. Ontario Health (Cancer Care Ontario) cannot guarantee funding above what is listed in hospital agreements. If a hospital is concerned about their allocated volumes, they can talk to their RCP and contact the Screening inbox at screening@cancercare.on.ca.

**What is the funding process/cycles for GI Endoscopy QBP?**

- The GI Endoscopy QBP funding process follows the funding allocation cycles below:
  - **Initial allocation:** Volume allocations are determined using historical data. Hospital feedback is considered.
  - **Year-end settlement:** Year-end volume data is settled against the most recent allocation. Funding is recovered for variation under the initial allocation. Funding is allocated for
variation over the initial allocation only if there are remaining QBP dollars. This funding is not guaranteed.

Cancer Screening Program in Relation to the QBP

How are CCC volumes affected by the QBP?

Ontario Health (Cancer Care Ontario) remains committed to improving colorectal cancer screening in Ontario through the CCC program. Ontario Health (Cancer Care Ontario) does not fund QBP hospitals separately for incremental colonoscopy volumes for CCC program indications. Instead, Ontario Health (Cancer Care Ontario) funds any in-scope CCC procedures through the QBP funding envelope based on the current QBP funding model. Volumes and wait times for CCC program indication colonoscopies will continue to be monitored through the CCC performance management framework. Further information or inquiries regarding QBP hospitals enrolled in the CCC program can be directed to the Screening inbox at screening@cancercare.on.ca.
### Appendix A

#### Table 1: List of Abbreviations

<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Full Form</th>
</tr>
</thead>
<tbody>
<tr>
<td>CCC</td>
<td>ColonCancerCheck</td>
</tr>
<tr>
<td>CHDB</td>
<td>Claims History Database</td>
</tr>
<tr>
<td>CIHI</td>
<td>Canadian Institute for Health Information</td>
</tr>
<tr>
<td>CIRT</td>
<td>Colonoscopy Interim Reporting Tool</td>
</tr>
<tr>
<td>CRC</td>
<td>colorectal cancer</td>
</tr>
<tr>
<td>DAD</td>
<td>Discharge Abstract Database</td>
</tr>
<tr>
<td>DSP</td>
<td>Data Submission Portal</td>
</tr>
<tr>
<td>ECFAAA</td>
<td>Excellent Care for All Act</td>
</tr>
<tr>
<td>FIT</td>
<td>fecal immunochemical test</td>
</tr>
<tr>
<td>gFOBT</td>
<td>guaiac fecal occult blood test</td>
</tr>
<tr>
<td>HBAM</td>
<td>Health-Based Allocation Model</td>
</tr>
<tr>
<td>HIG</td>
<td>HBAM Inpatient Grouper</td>
</tr>
<tr>
<td>HSFR</td>
<td>Health System Funding Reform</td>
</tr>
<tr>
<td>LHIN</td>
<td>Local Health Integration Network</td>
</tr>
<tr>
<td>NACRS</td>
<td>National Ambulatory Care Reporting System</td>
</tr>
<tr>
<td>OCCI</td>
<td>Ontario Case Costing Initiative</td>
</tr>
<tr>
<td>OCR</td>
<td>Ontario Cancer Registry</td>
</tr>
<tr>
<td>OHIP</td>
<td>Ontario Health Insurance Plan</td>
</tr>
<tr>
<td>PBF</td>
<td>patient-based funding</td>
</tr>
<tr>
<td>PCCRC</td>
<td>post-colonoscopy colorectal cancer</td>
</tr>
<tr>
<td>PEBC</td>
<td>Program in Evidence-Based Care</td>
</tr>
<tr>
<td>QBP</td>
<td>Quality-Based Procedure</td>
</tr>
<tr>
<td>QMP</td>
<td>Quality Management Program</td>
</tr>
<tr>
<td>RCP</td>
<td>Regional Cancer Program</td>
</tr>
<tr>
<td>RVP</td>
<td>Regional Vice President</td>
</tr>
</tbody>
</table>
References


Need this information in an accessible format?
1-855-460-2647,
TTY (416) 217-1815
publicaffairs@cancercare.on.ca.