CANADIAN **PARTNERSHIP** AGAINST CANCER
PARTENARIAT CANADIEN CONTRE LE CANCER

Colorectal Cancer Screening Indicators: Data Specifications

July 2024

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Important note on cohort method:

In response to the interest of the provincial and territorial screening programs to contribute to the international body of knowledge on organized colorectal cancer screening, we are using this opportunity to leverage the data from this data call to report internationally with CanScreen5. This work has emerged from collaborative discussions between the Partnership and the Canadian Cancer Screening Research Network (CanSSCRN) to collect, prepare, and submit the data.

Please note that each screening indicator is measured using a cohort method for this round of data collection, except for indicators 8a and 8b. The same screening cohort is followed for each of the indicators as they move through the pathway, as opposed to using a specified timeframe for each indicator. **The screening cohort timeframe is defined by those who had at least one successful FT (screening with result) between July 2018 – December 2020 (24 months plus 6-month grace period)** and is indicated in the specifications by the "Screening cohort timeframe" row.

Should you have any questions about methodology, please don't hesitate to contact us at **cpaccdata@partnershipagainstcancer.ca.**

Indicator 1a: Screen-Eligible Population Based Participation Rate

Definition	Proportion of the screen-eligible population who successfully completed ≥ one fecal test (FT) in the program within the measurement timeframe, as defined by the duration of the 24-month screening cycle plus 6 months grace period. **Note**: This is the cohort of interest to follow for the proceeding indicators.
Target	≥ 60% of the screen-eligible population within the defined 24-month screening cycle
Screening cohort timeframe	July 2018 – December 2020
Stratification Variables	• Age at FT (50-54, 55-59, 60-64, 65-69, 70-74) • Sex • Gender • Geographic location (Urban, Rural, Remote, Very remote)
Denominator	Number of individuals in the screen-eligible population within 24-month screening cycle (July 1, 2018 – June 30, 2020)
Numerator	Of denominator, number of individuals who **successfully** completed ≥ one FT in the program within a 30-month period (24-month screening cycle plus 6 months grace period: July 1, 2018 – December 31, 2020)
Notes	• Date of FT result refers to the date the laboratory has processed the sample (date of result). • The numerator excludes individuals who have only an inadequate FT; if an individual has an adequate and an inadequate FT, use the adequate FT. • Only count one successful FT per individual during the measurement timeframe: if more than one FT has been completed, use the most severe test for entering the cohort (e.g., if an individual has a normal and abnormal result for the same measurement timeframe, use the abnormal result); if more than one abnormal FT in the measurement timeframe, use the first one as the index for entering the cohort; if more than one normal FT in the measurement timeframe, use the most recent. • Age at FT is the age of the individual at FT laboratory result, which will be used for age breakdown. • The denominator will be provided by the program and be calculated to identify the population of screen-eligible individuals within the measurement timeframe; use the best rule as per provincial program. If the province uses the population data from Statistics Canada CANSIM projections, we suggest you take the average of Jan 1, 2019, and Jan 1, 2020, populations as the denominator. • Geography refers to an individual's place of residence or mailing address. Use the most recent version of PCCF+ to perform the analysis by geography. If other methodology is used, describe the details and data limitations in the 'Data Qualification Notes' section in the template. The categories (urban/rural/rural remote/rural very remote) are classified based on the CSIZEMIZ (Community size and metropolitan influence zone) variable from PCCF+: 1, 2, 3, 4: urban 5: rural 6: remote rural 7: very remote rural

Indicator 1b: Screening Program Participation Rate (Participation Rate Among Those Invited to Screen)

Definition	Proportion of the eligible population invited to screen who successfully completed ≥ one FT in the program within the measurement timeframe of 30 months
Target	n/a
Screening cohort timeframe	July 2018 – December 2020
Stratification Variables	• Age at FT (50-54, 55-59, 60-64, 65-69, 70-74) • Sex • Gender • Geographic location (Urban, Rural, Remote, Very remote)
Denominator	Number of individuals who were sent an invitation to screen within the 24-month screening cycle (July 1, 2018 –June 30, 2020)
Numerator	Of denominator, number of individuals invited to screen who **successfully** completed ≥ one FT in the program within a 30-month period (24-month screening cycle plus 6 months grace period: July 1, 2018 – December 31, 2020)
Notes	• An 'invitation to screen' is to be interpreted as an invitation letter via direct mail to the personal address of an individual who is part of the target population and has access to the program. • Age at FT is the age of the individual at FT laboratory result, which will be used for age breakdown • Date of FT result refers to the date the laboratory has processed the sample (date of result). • The numerator excludes individuals who have only an inadequate FT; if an individual has an adequate and an inadequate FT, use count the adequate FT. • Only count one successful FT per individual during the measurement timeframe: if more than one FT has been completed, use the most severe test for entering the cohort (e.g. if an individual has a normal and abnormal result for the same measurement timeframe, use the abnormal result); if more than one abnormal FT in the measurement timeframe, use the first one as the index for entering the cohort; if more than one normal FT in the measurement timeframe, use the most recent. • This indicator is only applicable to provinces that send invitations for colorectal cancer screening (AB, SK, MB, ON, NB, NS, PE, NL and NT). • Geography refers to an individual's place of residence or mailing address. Use the most recent version of PCCF+ to perform the analysis by geography. If other methodology is used, describe the details and data limitations in the 'Data Qualification Notes' section in the template. The categories (urban/rural/rural remote/rural very remote) are classified based on the CSIZEMIZ (Community size and metropolitan influence zone) variable from PCCF+: 1, 2, 3, 4: urban 5: rural 6: remote rural 7: very remote rural

Indicator 1c: Up-to-date for Colorectal Cancer Screening

Definition	Proportion of screen-eligible individuals who were up-to-date for colorectal screening within the measurement timeframe
Target	n/a
Screening cohort timeframe	July 2018 – December 2020 This indicator is not part of CanScreen5 reporting.
Stratification variables	• Age (50-54, 55-59, 60-64, 65-69, 70-74) • Sex • Gender • Geographic location (Urban, Rural, Remote, Very remote)
Denominator	Total number of screen-eligible individuals within the measurement timeframe
Numerator	Number of screen-eligible individuals who were up-to-date for colorectal screening by the end of the measurement timeframe **Note**: • Individuals with inadequate FT or unsuccessful colonoscopy/sigmoidoscopy would not be considered up-to-date
Notes	• Age is the age of the individual on December 31 of 2020 • Individuals were considered up-to-date for colorectal screening if they: 1) had a FT within the last two years (January 1st, 2019 to December 31st, 2020) OR 2) had a colonoscopy in the last ten years (January 1st, 2011 to December 31st, 2020) OR 3) had a flexible sigmoidoscopy in the last ten years (January 1st 2011 to December 31st, 2020) • Geography refers to an individual's place of residence or mailing address. Use the most recent version of PCCF+ to perform the analysis by geography. If other methodology is used, describe the details and data limitations in the 'Data Qualification Notes' section in the template. The categories (urban/rural/rural remote/rural very remote) are classified based on the CSIZEMIZ (Community size and metropolitan influence zone) variable from PCCF+: 1, 2, 3, 4: urban 5: rural 6: remote rural 7: very remote rural

Indicator 2: Follow-Up Colonoscopy Rate

Definition	Proportion of individuals with an abnormal FT result who had a follow-up colonoscopy within 180 days (6 months)
Target	≥ 85%
Screening cohort timeframe	July 2018 – December 2020 (cohort identified in the numerator of indicator 1a)
Stratification Variables	• Age at FT (50-54, 55-59, 60-64, 65-69, 70-74) • Sex • Gender • Screening round (First ever screen/Subsequent screen) • Geographic location (Urban, Rural, Remote, Very remote)
Denominator	Number of individuals with an abnormal FT lab result within the screening cohort
Numerator	Of denominator, those who had a follow-up colonoscopy within 180 days of the date of the abnormal FT lab result. **Note**: • Incomplete colonoscopies (caecum not reached, stopped due to patient discomfort, etc.) are included. • Use the first colonoscopy after the abnormal FT even if multiple colonoscopies are performed. **Exclusion**: • Any colonoscopy after 180 days of abnormal FT is excluded, even if it is the first and only colonoscopy.
Notes	• Date of FT result refers to the date the laboratory has processed the sample (date of result). • Age at FT is the age of the individual at FT laboratory result, which will be used for age breakdown. • Geography refers to an individual's place of residence or mailing address. Use the most recent version of PCCF+ to perform the analysis by geography. If other methodology is used, describe the details and data limitations in the 'Data Qualification Notes' section in the template. The categories (urban/rural/rural remote/rural very remote) are classified based on the CSIZEMIZ (Community size and metropolitan influence zone) variable from PCCF+: 1, 2, 3, 4: urban 5: rural 6: remote rural 7: very remote rural

Indicator 3: Wait Time to Follow-up Colonoscopy

Definition	1) Median and 90th percentile (in days) from the abnormal FT result to a follow-up colonoscopy (within 180 days of the abnormal FT) 2) Percentage of follow-up colonoscopies performed within 60 days of an abnormal FT
Target	≥ 90% within 60 days
Screening cohort timeframe	July 2018 – December 2020 (cohort identified in the numerator of indicator 1a)
Stratification Variables	Geographic location (Urban, Rural, Remote, Very remote)
Denominator	Number of individuals with an abnormal FT lab result within the screening cohort **Exclusion:** • Individuals who had a positive FT result but did not have a follow-up colonoscopy within 180 days
Numerator	Of denominator: • Number of colonoscopies performed within 60 days of abnormal FT • Median and 90th percentile (in days) from an abnormal FT result to a follow-up colonoscopy
Notes	• Date of the abnormal FT is the date the result is reported by the laboratory for each individual test. • If there is more than one abnormal FT, the date of the first test is used. • The colonoscopy may have been performed inside or outside the screening program, please provide data only for individuals whose abnormal FT was performed in the screening program. • Age at FT is the age of the individual at FT laboratory result, which will be used for age breakdown. Geography refers to an individual's place of residence or mailing address. Use the most recent version of PCCF+ to perform the analysis by geography. If other methodology is used, describe the details and data limitations in the 'Data Qualification Notes' section in the template. The categories (urban/rural/rural remote/rural very remote) are classified based on the CSIZEMIZ (Community size and metropolitan influence zone) variable from PCCF+: 1, 2, 3, 4: urban 5: rural 6: remote rural 7: very remote rural

Indicator 4: Program Invasive Colorectal Cancer Rate

Definition	Rate per 1,000 individuals with colorectal cancer confirmed by pathology from a follow-up colonoscopy performed within 180 days of an abnormal screening FT screened within the measurement timeframe
Target	≥ 2 colorectal cancers per 1,000 screened
Screening cohort timeframe	July 2018 – December 2020 (cohort identified in the numerator of indicator 1a)
Stratification Variables	• Age at FT (50-54, 55-59, 60-64, 65-69, 70-74) • Sex • Gender • Screening round (First ever screen/Subsequent screen) • Geographic location (Urban, Rural, Remote, Very remote)
Denominator	Number of individuals who had ≥ one successful FT processed by the laboratory within the screening cohort timeframe
Numerator	Of denominator, number of individuals with colorectal cancer confirmed by pathology from a follow-up colonoscopy performed within 180 days of the abnormal fecal test result **Inclusions:** • ICD-10 codes of malignant CRC (behaviour 3): C18.0; C18.2 – C18.9; C19; C20; C26.0 **Exclusions:** • Histology types in ICD-O3: 9590-9992 (leukemia, lymphoma and multiple myeloma), 9050-9055 (mesothelioma), and 9140 (Kaposi sarcoma) • 8806 (for sarcoma) • 881_ – 883_ fibromatous neoplasms • 8840 – 8842 myxomatous neoplasms • 8850 – 8881 lipomatous neoplasms • 8890 – 8921 myomatous neoplasms • 8240, 8246, and 8249 for carcinoid tumors (a.k.a. neuroendocrine ca)
Notes	• Age at FT is the age of the individual at FT laboratory result, which will be used for age breakdown. • Only count one successful FT per individual during the measurement: if more than one FT has been completed, use the most severe test for entering the cohort (e.g. if an individual has a normal and abnormal result for the same measurement timeframe, use the abnormal result); if more than one abnormal FT in the measurement timeframe, use the first one as the index for entering the cohort; if more than one normal FT in the measurement timeframe, use the most recent.

Indicator 5: Colorectal Cancer Stage Distribution

<table>
<tr><td>Definition</td><td>Distribution of detected colorectal cancer by TNM stage</td></tr>
<tr><td>Target</td><td>n/a</td></tr>
<tr><td>Screening cohort timeframe</td><td>July 2018 – December 2020 (cohort identified in the numerator of indicator 1a)</td></tr>
<tr><td>Stratification Variables</td><td>• Age at FT (50-54, 55-59, 60-64, 65-69, 70-74)
• Sex
• Gender
• Screening round (First ever screen/Subsequent screen)
• Geographic location (Urban, Rural, Remote, Very remote)</td></tr>
<tr><td>Denominator</td><td>Number of individuals with colorectal cancer confirmed by pathology from a follow-up colonoscopy performed within 180 days of an abnormal fecal test result
(same as numerator for indicator 4)

Inclusion:
Number of individuals with CRC of unknown stage and others</td></tr>
<tr><td>Numerator</td><td>Of denominator, number of individuals with invasive CRC stage I, II, III or IV, unknown stage and others diagnosed by the screening program

Inclusion:
• ICD-10 codes of malignant CRC (behaviour 3): C18.0; C18.2 – C18.9; C19; C20; C26.0

Exclusions:
• Histology types in ICD-O3: 9590-9992 (leukemia, lymphoma and multiple myeloma), 9050-9055 (mesothelioma), and 9140 (Kaposi sarcoma)
• 8806 (for sarcoma)
• 881_ – 883_ fibromatous neoplasms
• 8840 – 8842 myxomatous neoplasms
• 8850 – 8881 lipomatous neoplasms
• 8890 – 8921 myomatous neoplasms
• 8240, 8246, and 8249 for carcinoid tumors (a.k.a. neuroendocrine ca)</td></tr>
<tr><td>Notes</td><td>• Age at FT is the age of the individual at FT laboratory result, which will be used for age breakdown.
• Stageable incident cases per AJCC Cancer Staging Manual 8th Edition.
• Collaborative staging, leading to CRC stage grouping TNM I to IV, or Duke’s or Astler-Coller classifications A to D can be used when providing aggregated data, and the following table be used for equivalence:
<table>
<tr><th>TNM Stage</th><th>TNM Characteristics</th><th>Dukes Equivalent</th><th>Astler-Coller Equivalent</th></tr>
<tr><td>I</td><td>T1, N0, M0
T2, N0, M0</td><td>A</td><td>A and B1</td></tr>
<tr><td>II</td><td>T3, N0, M0
T4, N0, M0</td><td>B</td><td>B2 and B3</td></tr>
<tr><td>III</td><td>Any T, N1, M0
Any T, N2, M0</td><td>C</td><td>C1 - C3</td></tr>
<tr><td>IV</td><td>Any T, Any N, M1</td><td>D</td><td>D</td></tr>
</table></td></tr>
</table>

	○ **Unknown stage**: Individuals for whom staging has been completed and for whom with the information collected, a stage group cannot be assigned, should be reported as “unknown stage” ○ **Others:** includes unstaged and not applicable. Individuals with known invasive CRC but for whom the stage is not yet completed should be reported as “unstaged”

Indicator 6: Positivity Rate

Definition	Proportion of individuals with an abnormal FT result
Target	n/a
Screening cohort timeframe	July 2018 – December 2020 (cohort identified in the numerator of indicator 1a)
Stratification Variables	• Age at FT (50-54, 55-59, 60-64, 65-69, 70-74) • Sex • Gender • Geographic location (Urban, Rural, Remote, Very remote) • Screening round (First ever screen/Subsequent screen)
Denominator	Number of individuals having had ≥ one **successful** FT processed by the laboratory within the screening cohort timeframe (same as denominator for indicator 4)
Numerator	Of denominator, number of individuals with an abnormal FT result (same as denominator for indicator 2)
Notes	Only count one FT per individual. If more than one successful FT has been completed, use the most severe test result.

Indicator 7: Positive Predictive Value Invasive Colorectal Cancer (CRC)

Definition	The proportion of individuals with an abnormal fecal test within the measurement timeframe, in whom invasive colorectal cancer was confirmed by pathology at colonoscopy performed within 180 days of the FT.
Target	n/a
Screening cohort timeframe	July 2018 – December 2020 (cohort identified in the numerator of indicator 1a)
Stratification Variables	• Age at FT (50-54, 55-59, 60-64, 65-69, 70-74) • Sex • Gender • Screening round (First ever screen/Subsequent screen) • Geographic location (Urban, Rural, Remote, Very remote)
Denominator:	Number of individuals with an abnormal FT lab result within the screening cohort who had a follow-up colonoscopy within 180 days of the date of the abnormal FT lab result (same as numerator for indicator 2)
Numerator:	Of denominator, number of individuals with colorectal cancer confirmed by pathology from a follow-up colonoscopy performed within 180 days of the abnormal fecal test result (same as numerator for indicator 4)
Notes	The positive predictive value includes individuals diagnosed with invasive colorectal cancer from colonoscopy/sigmoidoscopy following an abnormal FT result.

Indicator 8a: Interval Cancer Rate after Normal Fecal Test Result

Definition	Rate per 1,000 individuals with FT screening results that were normal (negative) who were subsequently diagnosed with colorectal cancer before their next scheduled screening test
Target	n/a
Measurement Timeframe	January 2018 – December 2019 Note: This indicator follows the timeframe approach and requires a 2-year follow-up period.
Stratification Variables	• Age at FT (50-54, 55-59, 60-64, 65-69, 70-74) • Sex • Gender • Geographic location (Urban, Rural, Remote, Very remote)
Denominator	Number of individuals with normal FT screening result within the measurement timeframe
Numerator	Of denominator, number of individuals subsequently diagnosed with colorectal cancer within 24 months of the normal FT result **Inclusions:** • ICD-10 codes of malignant CRC (behaviour 3): C18.0; C18.2 – C18.9; C19; C20; C26.0 **Exclusions:** • Histology types in ICD-O3: 9590-9992 (leukemia, lymphoma and multiple myeloma), 9050-9055 (mesothelioma), and 9140 (Kaposi sarcoma) • 8806 (for sarcoma) • 881_ – 883_ fibromatous neoplasms • 8840 – 8842 myxomatous neoplasms • 8850 – 8881 lipomatous neoplasms • 8890 – 8921 myomatous neoplasms • 8240, 8246, and 8249 for carcinoid tumors (a.k.a. neuroendocrine ca)
Notes	• Age at FT is the age of the individual at FT laboratory result, which will be used for age breakdown. • Interval Cancers are described as cancers that occur after a normal (negative) FT or after an abnormal (positive) FT followed by a negative colonoscopy. The definition is expressed as the proportion of individuals with screening results that are negative for colon cancer and are subsequently diagnosed with colorectal cancer before the next scheduled test.

Indicator 8b: Interval Cancer Rate after Normal Colonoscopy Performed for Abnormal Fecal Test

Definition	Rate per 1,000 individuals with abnormal FT results and colonoscopy results negative for colorectal cancer (performed within 180 days of the abnormal FT) who were subsequently diagnosed with colorectal cancer between 6 months and 3 years after the colonoscopy
Target	n/a
Measurement Timeframe	January 2017 – December 2018 Note: This indicator follows the timeframe approach and requires a 3-year follow-up period.
Stratification Variables	• Age at FT (50-54, 55-59, 60-64, 65-69, 70-74) • Sex • Gender • Geographic location (Urban, Rural, Remote, Very remote) • Screening round (First ever screen/Subsequent screen)
Denominator	Number of individuals with abnormal FT screening result within the measurement timeframe and colonoscopy results negative for colorectal cancer (performed within 180 days of the abnormal FT)
Numerator	Of the denominator, number of individuals who were subsequently diagnosed with colorectal cancer within 6 to 36 months of the colonoscopy **Inclusions:** • ICD-10 codes of malignant CRC (behavior 3): C18.0; C18.2 – C18.9; C19; C20; C26.0 **Exclusions:** • Histology types in ICD-O3: 9590-9992 (leukemia, lymphoma and multiple myeloma), 9050-9055 (mesothelioma), and 9140 (Kaposi sarcoma) • 8806 (for sarcoma) • 881_ - 883_ fibromatous neoplasms • 8840 – 8842 myxomatous neoplasms • 8850 – 8881 lipomatous neoplasms • 8890 – 8921 myomatous neoplasms • 8240, 8246, and 8249 for carcinoid tumors (a.k.a. neuroendocrine ca)
Notes	• Age at FT is the age of the individual at FT laboratory result, which will be used for age breakdown. • Interval Cancers are described as cancers that occur after a negative FT or after a positive FT followed by a negative colonoscopy. The definition is expressed as the proportion of individuals with screening results that are negative for colon cancer and are subsequently diagnosed with colorectal cancer before the next scheduled test.