Technical Appendix

for indicators that measure progress of the Canadian Strategy for Cancer Control

**May 2022**

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# **Priority 1: Decrease the Risk of People Getting Cancer**

## Action 1: Help people to stop smoking or not start in the first place and live healthier lives

### Percentage of individuals classified as daily or occasional smokers

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| **Jurisdiction** | **Item** | **Description** |
| All provinces and territories | **Timeframe** | 2019 |
| **Denominator** | Respondents to the Canadian Community Health Survey who were aged 18+ and responded to the smoking question as well as questions regarding sex, household income quintile, and educational attainment. |
| **Numerator** | Respondents who indicated that they were an occasional or daily smoker. |
| **Stratifications** | 1. Sex (male, female)  2. Household income quintile (Q1: lowest to Q5: highest) – for provinces only  3. individual educational attainment (Less than secondary school graduation; secondary school graduation but no post-secondary education; post-secondary certificate/diploma or university degree) |
| **Data Source** | Canadian Community Health Survey |
| **Comments** |  |

## Action 2: Adopt proven practices known to reduce the risk of cancer

### Percentage of people who received a full course of HPV vaccination by age group (includes catch-up ages), by sex

Data Source: Provincial cancer agencies and programs

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| **Jurisdiction** | **Item** | **Description** |
| **For school-aged children** | | |
| AB | **Jurisdictional target** | No target/not provided |
| **Definition** | Percentage of people who received a full course of HPV vaccination  The Childhood Immunization Coverage Rates contain the probability a child will have received 2 doses of HPV by age twelve in 2019. The overall approach follows a birth cohort and applies time-to-immunization (survival analysis) methods to compute the probability of immunization over time, with an open birth cohort. The coverage rates are based on a birth cohort and reported in percentage by ages of 12. For example, the 2019 rates relate to the 2007 birth cohort which turned age 12 in 2019. This is a dynamic model, so there is no fixed numerator and denominator. All rates are reported by sex and/or zone of residence. |
| **Timeframe** | Calendar-year based |
| **Denominator** | Not applicable |
| **Numerator** | Not applicable |
| **Stratifications** | Sex (male, female), health zone |
| **Comments** | Data was downloaded from Alberta Health website in November 2020:  http://www.ahw.gov.ab.ca  /IHDA\_Retrieval/selectResults.do |
|  | | |
| MB | **Jurisdictional target** | No target/not provided |
| **Definition** | This indicator calculates the HPV vaccination completion rate for school-aged individuals: % of individuals who completed the full HPV vaccination (at least 2 doses) by age 17 through Manitoba’s school-based vaccination program |
| **Timeframe** | 2nd or 3rd vaccination is administered: Jan 1 2012 to Dec 31 2018 (for 2001 birth cohort) & Jan 1 2013 to Dec 31 2019 (for 2002 birth cohort) |
| **Denominator** | Number of individuals in 2001 and 2002 birth cohorts |
| **Numerator** | Number of individuals in who received at least 2 doses of the HPV vaccination through Manitoba’s school-based vaccination program during Jan 1 2012 - Dec 31 2018 (2001 birth cohort) and during Jan 1 2013 - Dec 31 2019 (2002 birth cohort) |
| **Stratifications** | Sex (male, female), RHA (Interlake Eastern, Northern, Prairie Mountain, Southern, Winnipeg) |
| **Comments** | The 2002 male birth cohort was the first to become eligible to receive HPV vaccination  The above policy change explains the significant % difference across the 2001 and 2002 birth cohorts  2001 birth cohort is aged 11 in 2012 AND 17 in 2018  2002 birth cohort is aged 11 in 2013 AND 17 in 2019 |
|  | | |
| NB | **Jurisdictional target** | No target/not provided |
| **Definition** | Percentage of people who received a full course of HPV vaccination  Grade 7, a series of two doses of human papillomavirus quadrivalent vaccine (HPV4) was offered to both male and female students from 2017/2018 onwards. |
| **Timeframe** | 2019/2020 School Year |
| **Denominator** | Total number of students enrolled in the grade/school where a Public Health school immunization program is available |
| **Numerator** | Total number of Grade 7 students with complete HPV series |
| **Stratifications** | Sex (male, female) |
| **Comments** | We have no age specific data since the data that is collected is from grade 7 girls and boys only.  The data for 2019-2020 are subject to change as data cleaning has not been conducted. |
|  | | |
| NS | **Jurisdictional target** | Yes – Provincial target immunization rate is 90 % |
| **Definition** | Percentage of Grade 7 students who received a full course of HPV vaccination  Grade 7 students in Nova Scotia who received 2 valid doses of HPV vaccine. Coverage timing: Prior to Grade 7 = immunization completed prior to September 1 of the school year; Within Grade 7: immunization completed between September 1 and August 31 of the Grade 7 school year; By December of Grade 8: immunization completed between September 1 and December 31 of the students Grade 8 year. Coverage rates include Home-schooled students. Home-schooled students make up 1.1% of the 2018-2019 grade 7 student population. |
| **Timeframe** | Grade seven students in school year 2018-2019 who received full course of the vaccine prior to January 1, 2020. |
| **Denominator** | Total number of students in grade 7 in 2018-2019 school year |
| **Numerator** | Total number of students in grade 7 in 2018-2019 school year who received both doses of HPV prior to January 1, 2020 |
| **Stratifications** | Sex (male, female) |
| **Comments** | Data was obtained from the Panorama database; in accordance with the NS school-based vaccine immunization coverage report 2018-2019. |
|  | | |
| PE | **Jurisdictional target** | Yes – 90% completely vaccinated by age 17 |
| **Definition** | Percentage of people who received a full course of HPV vaccination  Vaccination occurs in schools in grade 6. Students who miss vaccine day can get vaccinated at PEI Public Health Nursing. Vaccination in girls began in 2008 and in boys in 2013. |
| **Timeframe** | School based vaccinations for ages 12-17 in boys and 12-18 in girls based on median age during school year. Yearly based vaccination rates for women aged 19-22 as of December 1, 2019. |
| **Denominator** | Ages 12-17 in boys and 12-18 in girls using school enrollment as the denominator. Ages 18 (boys) or 19 (girls) through 22 were based on PEI Medicare enrollment based on their age on December 1, 2019. |
| **Numerator** | Number of people completely vaccinated for HPV. This was two doses for ages 12-15 years old and three doses for ages 16-22. |
| **Stratifications** | Age (12-22), sex (male, female) |
| **Comments** | Data was provided by the PEI Chief Public Health Office. This indicator was a hybrid. School based uptake rates were based on the school year for girls up until 18 years old and for boys up until 17 years old. After that, data was presented based on age on December 1, 2019. School based vaccination rates do not count students who are home schooled and students at the Moonlight International Academy as this is a brand-new school. Numerator and Denominator were not available at this time. |
|  | | |
| NL | **Jurisdictional target** | No target/not provided |
| **Definition** | Percentage of people who received a full course of HPV vaccination  Reported counts are for grade 6 students. The numerator includes those who have received a final dose of the HPV vaccine. |
| **Timeframe** | School years 2018/19 |
| **Denominator** | Total number of students in grade 6 in NL (the target grade for the NL HPV Vaccination Program) in the 2018/2019 school years |
| **Numerator** | Number of students in grade 6 in NL who received a final dose of HPV vaccination in the 2018/2019 school years |
| **Stratifications** | None |
| **Comments** | 1. Numerator and denominator counts include grade 6 students only.  2. Currently, NL Public Health is unable to provide male and female vaccination counts. We will provide this information in a future report if it becomes available. |

### Percentage of patients with breast, colon and ovarian cancer who undergo genetic testing

Data Source: Provincial cancer agencies and programs

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| --- | --- | --- |
| **Jurisdiction** | **Item** | **Description** |
| **Breast Cancer** | | |
| BC | **Jurisdictional target** | No target/not provided |
| **Definition** | % of breast cancer patients who received genetic testing results within 6 months of diagnosis |
| **Timeframe** | Diagnosed in 2019 |
| **Types of genetic tests included** |  |
| **Denominator** | # of patients with personal history of breast cancer who consented to genetic testing |
| **Numerator** | # with personal history of breast cancer diagnosed at age ≤ 35 who received genetic testing results within 6 months of diagnosis |
| **Stratifications** | By sex |
| **Comments** | Data excludes patients who:   1. were referred and seen but did not consent to move forward to genetic testing 2. were diagnosed with cancer after their genetic testing   Data includes logistical delays outside of BC Cancer control (e.g., time it takes for patients to submit samples for testing, appointment booking times also depend on patient availability)  Data for breast and colorectal reflects the length of our current waitlist to appointment which is in excess of two years for non-urgent indications - changes to our service delivery model have been made in order to see a dramatic reduction in the waitlist by the end of this calendar year |
|  | | |
| AB | **Jurisdictional target** | No target/not provided |
| **Definition** | 1. Breast cancer, female: The percent of patients diagnosed with breast cancer diagnosed at age ≤ 35 who received genetic testing within 9 months of diagnosis.  2. Breast cancer, male: The percent of male patients diagnosed with breast cancer who received genetic testing within 9 months of diagnosis. |
| **Timeframe** | 2019 year of cancer diagnosis |
| **Types of genetic tests included** | Breast Ovarian Cancer Panel, Core or Extended |
| **Denominator** | 1. Total number of female patients who were diagnosed with breast cancer at age ≤ 35 in 2019.  2. Total number of male patients who were diagnosed with breast cancer in 2019. |
| **Numerator** | 1. Total number of female patients who were diagnosed with breast cancer at age ≤ 35 in 2019, and received genetic testing within 9 months of diagnosis.  2. Total number of male patients who were diagnosed with breast cancer in 2019, and received genetic testing within 9 months of diagnosis. |
| **Stratifications** | Sex (male, female) |
| **Comments** | Denominator inclusions:  1. Invasive case only  2. Patient age ≥ 18 at diagnosis  3. Alberta residents only  Notes: Rectal genetic will not be submitted this time due to the lack of data. We might submit in the future years when we have the data. |
|  | | |
| MB | **Jurisdictional target** | No target/not provided |
| **Definition** | Percentage of patients with breast, colon and ovarian cancer who undergo genetic testing  Genetic testing can refer to either a test to i) assesses an individual's inherent risk for developing cancer (hereditary) or ii) to determine whether the genetic profile of an individual's tumor tissue is indicative of a hereditary cancer (i.e., identification of individuals who would benefit from a genetic test for hereditary cancer)  1. Hereditary; breast/ovarian  2. Hereditary; colon cancer  3. Tumor tissue; colorectal (colorectal cancer definition includes colon and rectum and excludes appendix and intestine) |
| **Timeframe** | 1. Hereditary; breast/ovarian: Jan – Dec 2019  2. Hereditary; colon: Jan – Dec 2019  3. Tumor tissue; colorectal: Jan 1 2018 – Dec 31 2019 |
| **Types of genetic tests included** | 1. Hereditary; breast/ovarian: Patients were screened using a 2, 6 or 10 gene panel. The 10 gene panel was initiated in Oct 2019 and replaced the 6 gene panel  2 gene panel: BRCA 1, BRCA 2  6 gene panel: BRCA1, BRCA2, CDH1, PALB2, PTEN, TP53  10 gene panel: BRCA 1, BRCA 2, PALB2, PTEN, TP53, MLH1, MSH2, MSH6, STK11, EPCAM  2. Hereditary; colon: Patients were screened using: the 6 gene panel for hereditary breast/ovarian cancer, the 12 gene panel for Lynch Syndrome/Polyposis (first initiated in Oct 2019) or the Lynch Syndrome Panel  6 gene panel for breast/ovarian  12 gene panel: MLH1, MSH2, MSH6, EPCAM, APC, MUTYH, BMPR1A, SMAD4, PTEN, STK11, POLE, POLD1  Lynch Syndrome gene panel: Completed at Mount Sinai, Toronto  3. Tumor tissue; colorectal: Colorectal cancer (CRC) tumors associated with Lynch Syndrome are characterized by defects in mismatch repair (MMR) genes: MLH1, MSH2, MSH6, PMS2. MMR genes are responsible for maintaining genomic stability by recognizing & correcting genetic mutations. Defects in this system therefore lead to the accumulation of genetic errors (which happen inside a type of DNA sequence called a microsatellite).  Two types of tests can be done on the CRC tumor cells to see if the tumor was caused by MMR gene defects: 1) The MMR immunohistochemistry test determines whether the CRC tumor is deficient in the repair machinery (the MMR system) and 2) The MIS test which assesses levels of microsatellite instability in the CRC tumor, which is a characteristic outcome of malfunctioning MMR genes. Ie: MIS is a proxy for the presence of MMR gene defects. |
| **Denominator** | 1. Hereditary; breast/ovarian: Total number of patients diagnosed with breast/ovarian cancer in 2019 2. Hereditary; colon: Total number of patients diagnosed with colon cancer in 2019 3. Tumor tissue; colorectal: Total number of colorectal cancer patients diagnosed from Jan 1 2018 to Dec 31 2019 |
| **Numerator** | 1. Hereditary; breast/ovarian: Number of breast/ovarian cancer patients diagnosed in 2019 and got a hereditary cancer screen test in the same timeframe 2. Hereditary; colon: Number of colon cancer patients diagnosed in 2019 and got a hereditary cancer screen test in the same year 3. Tumor tissue; colorectal: Number of colorectal cancer patients diagnosed from Jan 1 2018 to Dec 31 2019 who completed a screen for Lynch Syndrome (MMR or MIS test) in the same timeframe |
| **Stratifications** | 1. Hereditary; breast/ovarian: Age group (20-40, 41-60, 61-70, 71+) 2. Hereditary; colon: N/A due to low sample size 3. Tumor tissue; colorectal: Age group (<70, >= 70), sex (female, male) |
| **Comments** | Lynch Syndrome screening (3. Tumor tissue) is initiated based on age of cancer diagnosis (< 70 years old) or a family history; therefore stratification by RHA would not be informative. |
|  | | |
| ON | **Jurisdictional target** | No target/not provided |
| **Definition** | Number of women aged 30 to 69 years diagnosed with breast cancer, per 1,000 women who underwent genetic testing prior to cancer diagnosis. |
| **Timeframe** | Year of genetic testing - 2018. |
| **Types of genetic tests included** |  |
| **Denominator** | Number of women aged 30 to 69 years, who received genetic testing through the High Risk OBSP.  • Women aged 30 to 69 years, who underwent genetic testing through the High Risk OBSP, irrespectively of their screening eligibility.  • Age is based on the date of the genetic test requested. |
| **Numerator** | Number of women aged 30 to 69 years diagnosed with breast cancer (ductal carcinoma in situ [DCIS] or invasive), among those who received genetic testing through the High Risk OBSP.  • Women aged 30 to 69 years who were diagnosed with breast cancer (DCIS or invasive) within one year after their High Risk OBSP genetic testing. |
| **Stratifications** | Age group (30-39, 40-49, 50-59, 60-69) |
| **Comments** | Data sources:  • Integrated Client Management System (ICMS): Genetic testing data for the High Risk OBSP. 2018  • Ontario Cancer Registry (OCR): Breast cancer data. 2018-2019  Notes:  • This indicator only includes genetic testing through the High Risk OBSP. Therefore, genetic testing performed outside the High Risk OBSP is not included.  • Breast cancer data is extracted from the OCR, which has about one-year data lag.  • This indicator has a two-year data lag to allow for one-year follow-up after genetic testing, and another year to obtain breast cancer data.  • All women who underwent genetic testing are included regardless of their genetic test results and subsequent screening interventions. |
|  | | |
| **Colon Cancer** | | |
| BC | **Jurisdictional target** | No target/not provided |
| **Definition** | % of colorectal cancer patients who received genetic testing results within 6 months of diagnosis |
| **Timeframe** | Diagnosed in 2019 |
| **Types of genetic tests included** |  |
| **Denominator** | # of patients with personal history of colorectal cancer (CRC) diagnosed at age ≤ 40 who consented to genetic testing |
| **Numerator** | # of patients with personal history of CRC cancer diagnosed at age ≤ 40 who received genetic testing results within 6 months of diagnosis |
| **Stratifications** | None |
| **Comments** | See comments above for breast cancer. |
|  | | |
| MB | **Jurisdictional target** | No target/not provided |
| **Definition** | See above for breast cancer section. |
| **Timeframe** | See above for breast cancer section. |
| **Types of genetic tests included** | See above for breast cancer section. |
| **Denominator** | See above for breast cancer section. |
| **Numerator** | See above for breast cancer section. |
| **Stratifications** | See above for breast cancer section. |
| **Comments** |  |
|  | | |
| NL | **Jurisdictional target** | No target/not provided |
| **Definition** | % of colorectal cancer patients under 40 years of age that undergo genetic testing within one year of being diagnosed. |
| **Timeframe** | Diagnosis years- 2017-2019; Genetic testing - up to Dec 1, 2020. |
| **Types of genetic tests included** | No specific test name. Tests include tumour screening, known familial mutation, and multi-gene panel testing; IHC |
| **Denominator** | Number of patients under 40 who were diagnosed with invasive colorectal cancer in calendar year 2017- 2019 |
| **Numerator** | Number of patients under 40 who were diagnosed with colorectal cancer in calendar year 2017-2019 who had undergone a genetic test for colorectal cancer within one year of diagnosis. |
| **Stratifications** | None |
| **Comments** | 1. Exclusions: a). Non-invasive cancers; b) patients over 40 years of age; b) patients diagnosed outside NL; c) patients who received genetic testing outside of NL; d) histology codes: i) 8240 - Carcinoid tumor, NOS; ii) 9687 - Burkitt lymphoma, NOS; e) patients whose pathology reports could not be found; f) if patient declined genetics testing  2. NL can only report on colorectal cancer genetics testing at this time.  3. Numbers are too small to perform any stratification.  4. A patient was included in the numerator if immunohistochemistry (IHC) test was completed, regardless if he/she was referred to and/or seen by a genetics councillor.  5. 2017-2019 years were aggregated as number of cases per year were too small to report. |
|  | | |
| **Ovarian Cancer** | | |
| BC | **Jurisdictional target** | No target/not provided |
| **Definition** | % of ovarian cancer patients who received genetic testing results within 6 months of diagnosis |
| **Timeframe** | Diagnosed in 2019 |
| **Types of genetic tests included** |  |
| **Denominator** | # of patients with personal history of ovarian cancer who consented to genetic testing |
| **Numerator** | # of patients with personal history of ovarian cancer who received genetic testing results within 6 months of diagnosis |
| **Stratifications** | None |
| **Comments** | See comments above for breast cancer.  For ovarian cancer: cannot differentiate between epithelial and non-epithelial – therefore would never expect 100% testing |
|  | | |
| AB | **Jurisdictional target** | No target/not provided |
| **Definition** | % of ovarian cancer patients who received genetic testing results within 6 months of diagnosis |
| **Timeframe** | Diagnosed in 2019 |
| **Types of genetic tests included** |  |
| **Denominator** | # of patients with personal history of ovarian cancer who consented to genetic testing |
| **Numerator** | # of patients with personal history of ovarian cancer who received genetic testing results within 6 months of diagnosis |
| **Stratifications** | None |
| **Comments** | See comments above for breast cancer.  Epithelial and non-epithelial ovarian cancers cannot be differentiated – thus 100% testing is not expected |
|  | | |
| MB | **Jurisdictional target** | No target/not provided |
| **Definition** | % of colorectal cancer patients screened for Lynch Syndrome during specified timeframe. (Colorectal cancer definition include colon and rectum and excludes appendix and intestine).  1. Colon cancer (hereditary cancer screen)  2. Colorectal cancer (tumour tissue screen) |
| **Timeframe** | 1. Jan - Dec 2019  2. Jan 1 2018 - Dec 31 2019 |
| **Types of genetic tests included** | 1. Patients were screened using the following: the 6 gene panel for hereditary breast/ovarian cancer, the 12 gene panel for Lynch Syndrome/Polyposis (first initiated in Oct 2019) or the Lynch Syndrome Panel completed at Mount Sinai, Toronto.  6 gene panel for breast/ovarian: See B33  12 gene panel: MLH1, MSH2, MSH6, EPCAM, APC, MUTYH, BMPR1A, SMAD4, PTEN, STK11, POLE, POLD1  Lynch Syndrome gene panel: Samples were sent to Mount Sinai, Toronto (specifics of gene-panel not known)  2. Colorectal cancer (CRC) tumors associated with Lynch Syndrome are characterized by defects in mismatch repair (MMR) genes: MLH1, MSH2, MSH6, PMS2. MMR genes are responsible for maintaining genomic stability by recognizing & correcting genetic mutations. Defects in this system therefore lead to the accumulation of genetic errors (which happen inside a type of DNA sequence called a microsatellite).  Two types of tests can be done on the CRC tumor cells to see if the tumor was caused by MMR gene defects: 1) The MMR immunohistochemistry test determines whether the CRC tumor is deficient in the repair machinery (the MMR system) and 2) The MIS test which assesses levels of microsatellite instability in the CRC tumor, which is a characteristic outcome of malfunctioning MMR genes. Ie: MIS is a proxy for the presence of MMR gene defects. CRC tumors with stable microsatellites are unlikely to be caused by Lynch Syndrome, whereas tumors with any amount of microsatellite instability (low or high) indicate a Lynch Syndrome possibility. |
| **Denominator** | 1. Total number of patients diagnosed with colon cancer in 2019  2. Total number of colorectal cancer patients diagnosed from Jan 1 2018 to Dec 31 2019 |
| **Numerator** | 1. Number of colon cancer patients diagnosed in 2019 and got a hereditary cancer screen test in the same year  2. Number of colorectal cancer patients diagnosed from Jan 1 2018 to Dec 31 2019 who completed a screen for Lynch Syndrome (MMR or MIS test) in the same timeframe |
| **Stratifications** | Age (<70 and ≥70) and sex (male, female) for tumour tissue screen for Lynch syndrome only |
| **Comments** | Lynch Syndrome screening (ii. on tumor tissue) is initiated based on age of cancer diagnosis (< 70 years old) or a family history; therefore stratification by RHA will not be informative. |

# **Priority 2: Diagnose cancer faster, accurately, and at an earlier stage**

## Action 1: Prioritize rapid access to appropriate diagnosis for those suspected of having cancer

### Proportion of stage 4 diagnosis (lung, colorectal, bladder and melanoma cancer)

Data Source: Provincial cancer agencies and programs

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| --- | --- | --- |
| **Jurisdiction** | **Item** | **Description** |
| **Lung Cancer** | | |
| BC | **Jurisdictional target** | No target/not provided |
| **Year** | 2018 |
| **Projected data** | No |
| **Staging based on AJCC 8th edition** | Yes |
| **AJCC 8th edition variable used** | AJCC8\_path\_stage |
| **Inclusion of provincial residents only** | Yes |
| **Inclusion of Occult, Not Available, and Not Applicable (separately)** | Yes |
| **ICD codes alignment** | Yes |
| **Stratifications** | Sex (male, female) |
| **Comments** | Counts are combined for Occult and Unknown and for Not available and Unstageable. Age-standardized rates are combined for Occult and Unknown and for Not available and Unstageable. DCO cases are included in Not available and Unstageable category. |
|  | | |
| AB | **Jurisdictional target** | No target/not provided |
| **Year** | 2019 |
| **Projected data** | No |
| **Staging based on AJCC 8th edition** | Yes |
| **AJCC 8th edition variable used** | Used pathological stage first. If the pathological stage is blank, used the clinical stage |
| **Inclusion of provincial residents only** | Yes |
| **Inclusion of Occult, Not Available, and Not Applicable (separately)** | Yes |
| **ICD codes alignment** | Yes |
| **Stratifications** | Sex (male, female) |
| **Comments** | Cohort includes:  1. Patient age ≥ 18 at diagnosis  2. Alberta residents only Note: Few cases with registry status not completed were excluded. |
|  | | |
| SK | **Jurisdictional target** | No target/not provided |
| **Year** | 2018 |
| **Projected data** | Yes |
| **Staging based on AJCC 8th edition** | No |
| **AJCC 8th edition variable used** | NA |
| **Inclusion of provincial residents only** | Yes |
| **Inclusion of Occult, Not Available, and Not Applicable (separately)** | No |
| **ICD codes alignment** | Yes |
| **Stratifications** | Sex (male, female) |
| **Comments** | 1.1 Data source and preparation: All cancer data were sourced from the Saskatchewan Cancer Registry. Cancer cases from 1992-2017 (latest complete available year of data) were considered for incidence. Data obtained included the patient number, sex, date of diagnosis, date of death, topography, and morphology and behavior codes. Cancers were grouped into standard categories according to CPAC and ICD-O-3 specifications. Data management was done in SAS and R.  1.2 Methods - Incidence Projections: Saskatchewan covered population data was obtained from the Ministry of Health website (1) and projected population data was extracted from Statistics Canada, for medium population growth scenarios – medium population growth with historical trend (M1)(2). Each cancer site was grouped by sex, calendar year and age-group (18 age group). Projection methods use the R-package CANPROJ which is a version of NORDPRED modified by CPAC. Projection methods are described in detail elsewhere (3,4,5).  Total incidence by disease site (lung, colorectal, bladder, and melanoma) for all stages combined was projected for the years 2018 and 2019. Due to low case counts in several of the stage groupings, the average ratio of stage breakdown (0-4, other) was calculated for the most recent 5 years of data (2013-2017) by disease site and sex and applied to the projected incidence to obtain breakdown by stage for years 2018 and 2019.  1.3 Methods – Population Projections  Population projection data was sourced from Statistics Canada (2). The projection method used considers interaction among different demographic phenomena and combines rates associated with events (e.g., births, deaths, internal migration, immigration, emigration). The population of each province is projected individually. The medium growth M1 scenario is based on historical trends from 1981-2008 and uses assumptions on the total fertility rate, male and female life expectancy in 2036, immigration rate, emigration rate, returning emigrant rate, net temporary emigration, non-permanent residents, and interprovincial migration. As with other projections, the accuracy of these predictions can be affected by various economic, political and natural events that are difficult to predict, that in turn can affect the growth and composition of the provincial population. |
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| MB | **Jurisdictional target** | No target/not provided |
| **Year** | 2019 |
| **Projected data** | No |
| **Staging based on AJCC 8th edition** | Yes |
| **AJCC 8th edition variable used** | AJCC8\_path\_stage |
| **Inclusion of provincial residents only** | Yes |
| **Inclusion of Occult, Not Available, and Not Applicable (separately)** | Yes |
| **ICD codes alignment** | Yes |
| **Stratifications** | Sex (male, female), Stage (0, I, II,III,IV, Unknown, Occult) |
| **Comments** | Note re AJCC 8th staging variable: A combination of options was used. The 'path\_stage' is used preferentially if available. If it’s missing, unknown or NA, "post\_therapy\_stage" is used. If the latter is missing, unknown or NA, "clinical stage" is used.  If all of the above stages are missing, unknown or NA, the stage is then set to "unknown".  Regarding duplicate patient counts: Duplicate/multiple instances of patients is highly likely given patients may present with cancers at more than one site and/or stage. For simplicity, multiple instances of the same patient have been removed if they occur within the same disease site group (DSG). However, duplicate patients have been retained across DSGs. In other words, if the same patient has more than one cancer across the 4 DSGs (lung, melanoma, bladder or colorectal), they are not removed. |
|  | | |
| ON | **Jurisdictional target** | No target/not provided |
| **Year** | 2018 |
| **Projected data** | No |
| **Staging based on AJCC 8th edition** | Yes |
| **AJCC 8th edition variable used** | Any one of clinical/pathological/post therapy |
| **Inclusion of provincial residents only** | Yes |
| **Inclusion of Occult, Not Available, and Not Applicable (separately)** | No |
| **ICD codes alignment** | Yes |
| **Stratifications** |  |
| **Comments** |  |
|  | | |
| NB | **Jurisdictional target** | No target/not provided |
| **Year** | 2019 |
| **Projected data** | No |
| **Staging based on AJCC 8th edition** | Yes |
| **AJCC 8th edition variable used** | AJCC8\_path\_stage |
| **Inclusion of provincial residents only** | Yes |
| **Inclusion of Occult, Not Available, and Not Applicable (separately)** | Yes |
| **ICD codes alignment** | Yes |
| **Stratifications** | Sex (male, female) |
| **Comments** | Lung cancer cases diagnosed in year 2019 are now fully registered. The coding for colon cancer in year 2019 is ongoing and, bladder and melanoma cancers are not staged in New Brunswick. Stage 0 for lung (3 cases) and colon (14 cases) cancers are included in the overall counts (779 for lung and 621 for colorectal) but not required in Tables 1 & 2. Two lung cancer cases are missing Health Region information at the time of data extraction and 1 for colon cancer. |
|  | | |
| NS | **Jurisdictional target** | No target/not provided |
| **Year** | 2019 (Projected) |
| **Projected data** | Yes |
| **Staging based on AJCC 8th edition** | Yes – combined with AJCC 7th |
| **AJCC 8th edition variable used** | N/A (projection) |
| **Inclusion of provincial residents only** | Yes |
| **Inclusion of Occult, Not Available, and Not Applicable (separately)** | No |
| **ICD codes alignment** | Yes |
| **Stratifications** |  |
| **Comments** | The data is from the Nova Scotia Cancer Registry. The total case count for 2019 has been estimated by CanProj-R, using methods described in the Canadian Cancer Statistics series, applied to data years 1972 - 2017. Separate models by sex were estimated and summed to obtain a total for both sexes. Projection of stage IV disease is based on JoinPoint projection of the proportion of stage IV disease for the data years 2008 - 2017. Stages I - III are grouped in the above table, as they were not separately estimated. Cases staged as Occult, Unknown or Not Applicable were excluded from the proportion estimates and have been combined for presentation in the above table. The proportion of these cases is tabulated separately by sex and averaged over the final 3 years of available data (2015 - 2017). Models of late-stage proportion were sex-specific at the provincial level, and Health Zone-specific for sub-provincial estimates. For this reason, totals across Health Zone of any site/stage cells cannot be expected to equal the corresponding cell at the provincial level. Staging of cases in the provincial registry system was recorded using the Collaborative Stage framework, which has assigned an AJCC 'best' stage according to AJCC 7th edition (2008 - 2009) and AJCC 8th edition (2010 - 2017). |
|  | | |
| PE | **Jurisdictional target** | No target/not provided |
| **Year** | 2018 |
| **Projected data** | No |
| **Staging based on AJCC 8th edition** | Yes |
| **AJCC 8th edition variable used** | Used pathological stage first. If the pathological stage is blank, used the clinical stage |
| **Inclusion of provincial residents only** | Yes |
| **Inclusion of Occult, Not Available, and Not Applicable (separately)** | Yes |
| **ICD codes alignment** | Yes |
| **Stratifications** |  |
| **Comments** | AJCC8 has no consensus on how to assign a final stage to a patient. For this analysis, the pathologic staging was used as the final stage unless there was no stage given or if the stage was unknown at which point, the clinical stage was substituted as the final stage. |
|  | | |
| NL | **Jurisdictional target** | No target/not provided |
| **Year** | 2019 |
| **Projected data** | No |
| **Staging based on AJCC 8th edition** | Yes |
| **AJCC 8th edition variable used** | Not Applicable |
| **Inclusion of provincial residents only** | Yes |
| **Inclusion of Occult, Not Available, and Not Applicable (separately)** | Yes |
| **ICD codes alignment** | Yes |
| **Stratifications** |  |
| **Comments** | 1. NLCCR defines cancers using a multiple primary rule; therefore, patients with multiple primary cancers will be included more than once.  2. AJCC staging coded with value = '99' are categorized as 'Unknown’, value = '88' are 'Not Applicable' and missing values are categorized as 'Not Available'.  3. AJCC 8th edition staging were summarized into each of the stratified stages by prioritizing pathologic staging first, followed by clinical staging if pathologic staging information were unknown or not available and finally by post-treatment staging if both pathologic and clinical staging information was unknown or not available.  4. Due to methodological differences between AJCC-8 and collaborative staging ASIR from 2018 onward is not directly comparable to previous ASIRs.  5. NL can only submit lung cancer staging information at this time, colorectal staging information is currently being entered into NL Cancer Registry and we be the next cancer site to be submitted once completed - tentative completion date of January 31, 2021. Staging for 2019 melanoma and bladder will commence afterwards.  5. As per initial inclusion and exclusion criteria for lung cancer, colorectal cancer, and melanoma, the main tables report counts of malignant cancer cases only (ICD-O-3 behavior code 3). For bladder cancer, the main tables report malignant and in situ cases combined. The additional stratification tables provide counts for lung cancer, colorectal cancer, and melanoma, which include malignant (ICD-O-3 behavior code 3) and in situ (ICD-O-3 behavior code 2) combined. |
|  | | |
| **Colorectal Cancer** | | |
| BC | **Jurisdictional target** | No target/not provided |
| **Year** | 2018 |
| **Projected data** | No |
| **Staging based on AJCC 8th edition** | Yes |
| **AJCC 8th edition variable used** | AJCC8\_path\_stage |
| **Inclusion of provincial residents only** | Yes |
| **Inclusion of Occult, Not Available, and Not Applicable (separately)** | Yes |
| **ICD codes alignment** | Yes |
| **Stratifications** | Sex (male, female) |
| **Comments** | See comments above for lung cancer. |
|  | | |
| AB | **Jurisdictional target** | No target/not provided |
| **Year** | 2019 |
| **Projected data** | No |
| **Staging based on AJCC 8th edition** | Yes |
| **AJCC 8th edition variable used** | Used pathological stage first. If the pathological stage is blank, used the clinical stage |
| **Inclusion of provincial residents only** | Yes |
| **Inclusion of Occult, Not Available, and Not Applicable (separately)** | Yes |
| **ICD codes alignment** | Yes |
| **Stratifications** | Sex (male, female) |
| **Comments** | See comments above for lung cancer. |
|  | | |
| SK | **Jurisdictional target** | No target/not provided |
| **Year** | 2018 |
| **Projected data** | Yes |
| **Staging based on AJCC 8th edition** | No |
| **AJCC 8th edition variable used** | N/A |
| **Inclusion of provincial residents only** | Yes |
| **Inclusion of Occult, Not Available, and Not Applicable (separately)** | No |
| **ICD codes alignment** | Yes |
| **Stratifications** | Sex (male, female) |
| **Comments** | See comments above lung cancer |
|  | | |
| MB | **Jurisdictional target** | No target/not provided |
| **Year** | 2019 |
| **Projected data** | No |
| **Staging based on AJCC 8th edition** | Yes |
| **AJCC 8th edition variable used** | AJCC8\_path\_stage |
| **Inclusion of provincial residents only** | Yes |
| **Inclusion of Occult, Not Available, and Not Applicable (separately)** | Yes |
| **ICD codes alignment** | Yes |
| **Stratifications** | Sex (male, female), Stage (0, I, II,III,IV, Unknown, Occult) |
| **Comments** | See comments above for lung cancer. |
|  | | |
| ON | **Jurisdictional target** | No target/not provided |
| **Year** | 2018 |
| **Projected data** | No |
| **Staging based on AJCC 8th edition** | Yes |
| **AJCC 8th edition variable used** | Any one of clinical/pathological/post therapy |
| **Inclusion of provincial residents only** | Yes |
| **Inclusion of Occult, Not Available, and Not Applicable (separately)** | No |
| **ICD codes alignment** | Yes |
| **Stratifications** |  |
| **Comments** |  |
|  | | |
| NB | **Jurisdictional target** | No target/not provided |
| **Year** | 2019 |
| **Projected data** | No |
| **Staging based on AJCC 8th edition** | Yes |
| **AJCC 8th edition variable used** | AJCC8\_path\_stage |
| **Inclusion of provincial residents only** | Yes |
| **Inclusion of Occult, Not Available, and Not Applicable (separately)** | Yes |
| **ICD codes alignment** | Yes |
| **Stratifications** | Sex (male, female) |
| **Comments** |  |
|  |  |  |
| NS | **Jurisdictional target** | No target/not provided |
| **Year** | 2019 (Projected) |
| **Projected data** | Yes |
| **Staging based on AJCC 8th edition** | Yes – combined with 7th edition |
| **AJCC 8th edition variable used** | N/A (projection) |
| **Inclusion of provincial residents only** | Yes |
| **Inclusion of Occult, Not Available, and Not Applicable (separately)** | No |
| **ICD codes alignment** | Yes |
| **Stratifications** |  |
| **Comments** | See comments above for lung cancer. |
|  | | |
| PE | **Jurisdictional target** | No target/not provided |
| **Year** | 2018 |
| **Projected data** | No |
| **Staging based on AJCC 8th edition** | Yes |
| **AJCC 8th edition variable used** | Used pathological stage first. If the pathological stage is blank, used the clinical stage |
| **Inclusion of provincial residents only** | Yes |
| **Inclusion of Occult, Not Available, and Not Applicable (separately)** | Yes |
| **ICD codes alignment** | Yes |
| **Stratifications** |  |
| **Comments** | See comments above for lung cancer. |
|  | | |
| NL | **Jurisdictional target** | No target/not provided |
| **Year** | 2019 |
| **Projected data** | No |
| **Staging based on AJCC 8th edition** | Yes |
| **AJCC 8th edition variable used** | Not Applicable |
| **Inclusion of provincial residents only** | Yes |
| **Inclusion of Occult, Not Available, and Not Applicable (separately)** | Yes |
| **ICD codes alignment** | Yes |
| **Stratifications** |  |
| **Comments** | See comments above for lung cancer. |
|  | | |
| **Bladder Cancer** | | |
| AB | **Jurisdictional target** | No target/not provided |
| **Year** | 2019 |
| **Projected data** | No |
| **Staging based on AJCC 8th edition** | Yes |
| **AJCC 8th edition variable used** | Used pathological stage first. If the pathological stage is blank, used the clinical stage |
| **Inclusion of provincial residents only** | Yes |
| **Inclusion of Occult, Not Available, and Not Applicable (separately)** | Yes |
| **ICD codes alignment** | Yes |
| **Stratifications** | Sex (male, female) |
| **Comments** | See comments above for lung cancer. |
|  | | |
| SK | **Jurisdictional target** | No target/not provided |
| **Year** | 2018 |
| **Projected data** | Yes |
| **Staging based on AJCC 8th edition** | No |
| **AJCC 8th edition variable used** | N/A |
| **Inclusion of provincial residents only** | Yes |
| **Inclusion of Occult, Not Available, and Not Applicable (separately)** | No |
| **ICD codes alignment** | Yes |
| **Stratifications** | Sex (male, female) |
| **Comments** | See comments above lung cancer |
|  | | |
| MB | **Jurisdictional target** | No target/not provided |
| **Year** | 2019 |
| **Projected data** | No |
| **Staging based on AJCC 8th edition** | Yes |
| **AJCC 8th edition variable used** | AJCC8\_path\_stage |
| **Inclusion of provincial residents only** | Yes |
| **Inclusion of Occult, Not Available, and Not Applicable (separately)** | Yes |
| **ICD codes alignment** | Yes |
| **Stratifications** | Sex (male, female), Stage (0, I, II,III,IV, Unknown, Occult) |
| **Comments** | See comments above for lung cancer. |
|  | | |
| PE | **Jurisdictional target** | No target/not provided |
| **Year** | 2018 |
| **Projected data** | No |
| **Staging based on AJCC 8th edition** | Yes |
| **AJCC 8th edition variable used** | Used pathological stage first. If the pathological stage is blank, used the clinical stage |
| **Inclusion of provincial residents only** | Yes |
| **Inclusion of Occult, Not Available, and Not Applicable (separately)** | Yes |
| **ICD codes alignment** | Yes |
| **Stratifications** |  |
| **Comments** | See comments above for lung cancer. |
|  | | |
| NL | **Jurisdictional target** | No target/not provided |
| **Year** | 2019 |
| **Projected data** | No |
| **Staging based on AJCC 8th edition** | Yes |
| **AJCC 8th edition variable used** | Not Applicable |
| **Inclusion of provincial residents only** | Yes |
| **Inclusion of Occult, Not Available, and Not Applicable (separately)** | Yes |
| **ICD codes alignment** | Yes |
| **Stratifications** |  |
| **Comments** | See comments above for lung cancer. |
| **Melanoma Cancer** | | |
| AB | **Jurisdictional target** | No target/not provided |
| **Year** | 2019 |
| **Projected data** | No |
| **Staging based on AJCC 8th edition** | Yes |
| **AJCC 8th edition variable used** | Used pathological stage first. If the pathological stage is blank, used the clinical stage |
| **Inclusion of provincial residents only** | Yes |
| **Inclusion of Occult, Not Available, and Not Applicable (separately)** | Yes |
| **ICD codes alignment** | Yes |
| **Stratifications** | Sex (male, female) |
| **Comments** | See comments above for lung cancer. |
|  | | |
| SK | **Jurisdictional target** | No target/not provided |
| **Year** | 2018 |
| **Projected data** | Yes |
| **Staging based on AJCC 8th edition** | No |
| **AJCC 8th edition variable used** | N/A |
| **Inclusion of provincial residents only** | Yes |
| **Inclusion of Occult, Not Available, and Not Applicable (separately)** | No |
| **ICD codes alignment** | Yes |
| **Stratifications** | Sex (male, female) |
| **Comments** | See comments above lung cancer |
|  | | |
| MB | **Jurisdictional target** | No target/not provided |
| **Year** | 2019 |
| **Projected data** | No |
| **Staging based on AJCC 8th edition** | Yes |
| **AJCC 8th edition variable used** | AJCC8\_path\_stage |
| **Inclusion of provincial residents only** | Yes |
| **Inclusion of Occult, Not Available, and Not Applicable (separately)** | Yes |
| **ICD codes alignment** | Yes |
| **Stratifications** | Sex (male, female), Stage (0, I, II,III,IV, Unknown, Occult) |
| **Comments** | See comments above for lung cancer. |
|  | | |
| PE | **Jurisdictional target** | No target/not provided |
| **Year** | 2018 |
| **Projected data** | No |
| **Staging based on AJCC 8th edition** | Yes |
| **AJCC 8th edition variable used** | P stage first, C stage second |
| **Inclusion of provincial residents only** | Yes |
| **Inclusion of Occult, Not Available, and Not Applicable (separately)** | Yes |
| **ICD codes alignment** | Yes |
| **Stratifications** |  |
| **Comments** | See comments above for lung cancer. |
|  | | |
| NL | **Jurisdictional target** | No target/not provided |
| **Year** | 2019 |
| **Projected data** | No |
| **Staging based on AJCC 8th edition** | Yes |
| **AJCC 8th edition variable used** | Not Applicable |
| **Inclusion of provincial residents only** | Yes |
| **Inclusion of Occult, Not Available, and Not Applicable (separately)** | Yes |
| **ICD codes alignment** | Yes |
| **Stratifications** |  |
| **Comments** | See comments above for lung cancer. |

## Action 2: Strengthen existing screening efforts and implement lung-cancer screening programs across the country

### Proportion of the eligible population that is up to date for colorectal cancer screening

Data Source: Provincial cancer agencies and programs

|  |  |  |
| --- | --- | --- |
| **Jurisdiction** | **Item** | **Description** |
| BC | **Jurisdictional target** | No target/not provided |
| **Inclusion of fit test / timeframe** | January 1 - December 31, 2016 - 2020 |
| **Inclusion of FOBT test / timeframe** | Not Applicable |
| **Inclusion of sigmoidoscopy / timeframe** | Not Applicable |
| **Inclusion of colonoscopy / timeframe** | Not Applicable |
| **Based on 50-74?** | Yes |
| **Age calculation** | Age calculated as of Dec 31 in each year |
| **Denominator** | BC population age 50-74, adjusted for prevalence of colorectal cancer |
| **Numerator** | The number of unique individuals aged 50-74 that have completed a BC Cancer Colon Screening Program FIT test in the past 30 months |
| **Stratifications** | Sex (male, female)\*year (2016-2020) |
| **Comments** | Adjustments for prior history of colorectal cancer in the population are based on age-specific estimates and projections based on prevalence data provided by the BC Cancer Registry. |
|  | | |
| AB | **Jurisdictional target** | No target/not provided |
| **Inclusion of fit test / timeframe** | 2018-2019 |
| **Inclusion of FOBT test / timeframe** | Not Applicable |
| **Inclusion of sigmoidoscopy / timeframe** | 2015-2019 |
| **Inclusion of colonoscopy / timeframe** | 2015-2019 |
| **Based on 50-74?** | Yes |
| **Age calculation** | Denominator: Alberta residents aged 50-74 at the index date; Index date was defined as the midpoint in a two-year period, e.g., calendar year: Jan 1st, 2019 for 2018-2019  Numerator: Aged at exam date |
| **Denominator** | Total number of Alberta screen-eligible individuals, 50-74 years old in each two-year period |
| **Numerator** | Total number of Alberta screen-eligible individuals, 50-74 years old, who had FT test in past two years and/or sigmoidoscopy/colonoscopy in the past five years |
| **Stratifications** | Age group (50-54, 55-59, 60-64, 65-69, 70-74) |
| **Comments** | We could not stratify the numbers by FIT/colonoscopy/sigmoidoscopy as the time period across 5 years, each category is not mutually exclusive - especially if stratifying by age at the same time; patients will be counted multiple times in the calculation. Therefore, we could not provide this stratification. Data Access on: NOV 24, 2020 |
|  | | |
| MB | **Jurisdictional target** | No target/not provided |
| **Inclusion of fit test / timeframe** | No |
| **Inclusion of FOBT test / timeframe** | Yes; FOBT test includes both program FOBTs with a positive, negative and indeterminate results, and non-program FOBTs (result of non-program FOBTs is unknown)  Last 2 years (Jan 1, 2018 – Dec 31, 2019) |
| **Inclusion of sigmoidoscopy / timeframe** | Yes; Last 5 years (Jan 1, 2015 to Dec 31, 2019) |
| **Inclusion of colonoscopy / timeframe** | Yes; Last 5 years (Jan 1, 2015 to Dec 31, 2019) |
| **Based on 50-74?** | Yes |
| **Age calculation** | The numerator includes individuals 50-74 years old as of service date, while the denominator is the total count of individuals aged 50-74 as of June 1, 2019 (see comments). |
| **Denominator** | Number of individuals aged 50-74 (as of June 1, 2019) in Manitoba |
| **Numerator** | Number of individuals aged 50-74 (as of service date) who completed a: a) fecal test with a positive, negative, or indeterminate result in the last two years, or b) a colonoscopy or flexible sigmoidoscopy within the last five years |
| **Stratifications** | Age group (50-54, 55-59, 60-64, 65-69, 70-74, 50-74 combined), sex (male, female), Regional Health Authority (Winnipeg, Southern, Interlake-Eastern, Prairie Mountain, Northern) |
| **Comments** | June 1, 2019: This is the midpoint date in the year which Manitoba Population Health uses to calculate age  Individuals belonging to unspecified RHAs are excluded from the indicator calculation |
|  | | |
| ON | **Jurisdictional target** | No target/not provided |
| **Inclusion of fit test / timeframe** | Within a 2-year period up to Dec 31 of each year |
| **Inclusion of FOBT test / timeframe** | Not Applicable |
| **Inclusion of sigmoidoscopy / timeframe** | Within a 10-year period up to Dec 31 of each year |
| **Inclusion of colonoscopy / timeframe** | Within a 10-year period up to Dec 31 of each year |
| **Based on 50-74?** | Yes, the indicator is based on those 50-74 years of age |
| **Age calculation** | Ontario population aged 50 to 74 years old as of the index date, January 1st, in each year between 2017 to 2019 (see denominator description) |
| **Denominator** | Derived from the Primary Care Population Dataset (PCPOP), the denominator(s) include all Ontario residents who were 50-74 years of age on index date, corresponding to January 1st of 2017, 2018, and 2019, respectively. People were further excluded if they had:  (1) an invalid ICES key number (IKN),  (2) missing date of birth,  (3) missing postal code,  (4) ineligible for Ontario Health Insurance Plan (OHIP)  (5) no contact with the health care system for an extended period of time,  (6) < 50 or >74 years of age on index date,  (7) any history of colon cancer in the Ontario Cancer Registry (OCR),  (8) any history of total colectomy in OHIP, or  (9) a history of inflammatory bowel disease in the 5 years prior to the index date, in the Ontario Crohn's and Colitis Cohort Database (OCCC). |
| **Numerator** | Eligible persons who underwent at least one of the following:  (1) FOBT/FIT test in the reporting year, or one year prior to the index date (i.e., within 2-years up to Dec 31 of each year),  (2) flexible sigmoidoscopy in the reporting year, or in the 9-years prior to the index date, or  (3) Colonoscopy in the reporting year, or in the 9-years prior to the index date |
| **Stratifications** | Age group (50-54, 55-59, 60-64, 65-69, 70-74, 50-74 combined) |
| **Comments** | Data Sources:  CONTACT  Ontario Cancer Registry  Ontario Crohn’s and colitis cohort  Ontario Health Insurance Plan  Postal Code Conversion File  Primary Care Population Dataset  PCPOP is a population level dataset that includes all people in Ontario who are deemed alive and eligible as of a reference date. From 2008 and onwards, PCPOP is created bi-annually; such cohorts capture people who are alive and eligible for OHIP as of the reference date, have had some form of recent contact with the healthcare system (see below), and excludes non-Ontario residents.  Registered Persons Database  We use the date of last contact to adjust RPDB population counts to approximate population (total) estimates reported by Statistics Canada. The last contact threshold is 11 years for 2016/17 to 2018/19, and 10 years for 2019/20, indexed to March 31 of the respective year.  Other Important Notes:  Data shown may not agree with Ontario Health (Cancer Care Ontario) reporting for this indicator due to differences in data compilation including the use of different data sources, variations in defining colorectal tests, the exclusion of persons with a history of inflammatory bowel disease, and adjustments made to RPDB population estimates to more closely align with estimates reported by Statistics Canada.  This indicator is both prospective, and retrospective, from the index date (January 1st of each year). For example, the 2017 reporting year (January 1, 2017 - December 31, 2017) will capture fecal tests performed between January 1, 2016 and December 31, 2017, flexible sigmoidoscopies performed between January 1, 2008 and December 31, 2017, and colonoscopies performed between January 1, 2008 and December 31, 2017.  Due to the lookback period, some persons will be younger than 50 years of age when they received one of these tests of interest. |
|  | | |
| NB | **Jurisdictional target** | No target/not provided |
| **Inclusion of fit test / timeframe** | Yes - January 1, 2018-June 30, 2020 |
| **Inclusion of FOBT test / timeframe** | Not Applicable |
| **Inclusion of sigmoidoscopy / timeframe** | No |
| **Inclusion of colonoscopy / timeframe** | Yes - January 1, 2018-June 30, 2020 |
| **Based on 50-74?** | Yes |
| **Age calculation** | Derived based on the date of birth and result date |
| **Denominator** | Population estimates from Statistics Canada |
| **Numerator** | Number of individuals who successfully completed one FT in the program within 30-month period (24-month screening cycle plus 6 months grace period January 1, 2018-June 30, 2020) |
| **Stratifications** | Age group (50-54, 55-59, 60-64, 65-69, 70-74, 50-74 combined) |
| **Comments** | 1) Tables 1 & 2: Column "Number who received FIT test" is understood as "Number of FIT Tests".  2) Only program-based colonoscopy procedures are reported. |
|  | | |
| NS | **Jurisdictional target** | No target/not provided |
| **Inclusion of fit test / timeframe** | Yes; April 1, 2017 – March 31, 2019 |
| **Inclusion of FOBT test / timeframe** | Not Applicable |
| **Inclusion of sigmoidoscopy / timeframe** | No |
| **Inclusion of colonoscopy / timeframe** | No |
| **Based on 50-74?** | Yes |
| **Age calculation** | Difference between Date of event and Date of birth |
| **Denominator** | 2017 intercensal estimates provided by Stats Canada |
| **Numerator** | Every NS resident (having valid health card) who had a FIT test result between 01Apr2017 and 31Mar2019. |
| **Stratifications** | Age group (50-54, 55-59, 60-64, 65-69, 70-74, 50-74 combined) |
| **Comments** | The numerator represents the number of residents who successfully COMPLETED a FIT test (not the number who RECEIVED a test). |
|  | | |
| PE | **Jurisdictional target** | 60% for FIT screening uptake. There was no set overall screening target. |
| **Inclusion of fit test / timeframe** | July 1 2017-Dec 31 2019. FIT testing is recommended every 2 years. A 2.5 year interval was chosen in case individuals had a delay. |
| **Inclusion of FOBT test / timeframe** | Not Applicable |
| **Inclusion of sigmoidoscopy / timeframe** | Jan 1 2010-Dec 31 2019. Scoping recommended every 10 years by Canadian Task Force on Preventive Health Care Guidelines (2016) |
| **Inclusion of colonoscopy / timeframe** | Jan 1 2010-Dec 31 2019. Scoping recommended every 10 years by Canadian Task Force on Preventive Health Care Guidelines (2016) |
| **Based on 50-74?** | Only patients 50-74 were counted |
| **Age calculation** | Age was calculated at time of screening test ("last specimen collected date" was the date used from FIT database) |
| **Denominator** | Average PEI population aged 50-74 for 2018 and 2019 |
| **Numerator** | (A) The number of people that had a FIT test from July 1, 2017 through Dec 31, 2019.  (B) The number of people who had a sigmoidoscopy or colonoscopy from January 1, 2010 through Dec 31, 2019.  (C) The number of people who had either (A) and/or (B). |
| **Stratifications** | Age group (50-54, 55-59, 60-64, 65-69, 70-74, 50-74 combined) |
| **Comments** | \*Males and females did not add up to the total because one patient did not identify their sex for the FIT test.  1. A 2.5 years for FIT test was used as some people may need a few extra days to perform test and bring it into lab.  2. The PEI cancer registry was used to remove everyone that had colorectal cancer already before their test.  3. Some of the testing which was believed to be screening might actually be a diagnostic test for symptomatic people. There was no reasonable way to remove these people. Because of this, the screening was slightly overestimated.  4. Canadian Task Force on Preventive Health Care Guidelines (2016) were used to decide that scoping interval should be 10 years.  5. Sigmoidoscopic exam was included as well as sigmoidoscopic-flexible for the sigmoidoscopy results. |
|  | | |
| NL | **Jurisdictional target** | No target/not provided |
| **Inclusion of fit test / timeframe** | Yes – 24 months |
| **Inclusion of FOBT test / timeframe** | Not Applicable |
| **Inclusion of sigmoidoscopy / timeframe** | No |
| **Inclusion of colonoscopy / timeframe** | Yes – 60 months |
| **Based on 50-74?** | Yes |
| **Age calculation** | Reporting calendar year 2018 |
| **Denominator** | Number of individuals aged 50-74 years. Data acquired from Community accounts NL (census 2016) |
| **Numerator** | Number of individuals aged 50-74 years who had a successful FIT result in 2 years or a colonoscopy in 5 years to align with program eligibility (Programmatic data) |
| **Stratifications** | Age group (50-54, 55-59, 60-64, 65-69, 70-74, 50-74 combined) |
| **Comments** |  |

### 

# **Priority 3: Deliver high-quality care in a sustainable, world class system**

## Action 1: Set best Practices and standards for care delivery and promote their adoption

### Percentage of patients who were referred to/discussed by a multi-disciplinary care team prior to treatment (rectal cancer and pediatric cancer)

Data Source: Provincial cancer agencies and programs

|  |  |  |
| --- | --- | --- |
| **Jurisdiction** | **Item** | **Description** |
| **Rectal Cancer** | | |
| BC | **Jurisdictional target** | No target/not provided |
| **Definition** | Proportion of surgeons performing rectal cancer surgery where more than two thirds of their patients are presented at a MDC |
| **Timeframe** | Survey was sent out in May 2021 but surgeons were identified according to their 2019 and 2020 rectal cancer surgery volume. |
| **Definition of Multidisciplinary care team** | A high quality multidisciplinary cancer conference (MCC) is comprised of: (1) MCC Coordinator (administrative support), (2) MCC Chair, (3) Team members in attendance (medical oncology, radiation oncology, surgery, pathology, radiology), (4) Regular scheduled meetings, (5) A system for recording and communicating MCC recommendations |
| **Denominator** | 27 surgeons who perform rectal surgery on cancer patients were sent the survey. 18 responses were obtained - this is therefore the denominator. Although the response rate was 67%, the responders constituted 90% of the rectal cancer surgery volume in 2019 and 2020 |
| **Numerator** | 15 of the responders specified >2/3 of their patients are presented at MCC, 10 respondents said all their patients were presented at MCC |
| **Stratifications** | None |
| **Comments** |  |
|  | | |
| MB | **Jurisdictional target** | No target/not provided |
| **Definition** | Percentage of **GI** cancer patients who were referred/discussed by a multidisciplinary care team prior to treatment |
| **Timeframe** | January 1 to December 21 2019 |
| **Definition of Multidisciplinary care team** | The GI team consists of medical oncologists, radiation oncologists, oncological surgeons, hepatobiliary surgeons, pathologists, radiologists, nurses, psychosocial oncology counsellors, GI clinical trials unit nurses and the GI triage nurse. The team meets weekly to discuss GI patient cases that either require radiology/pathology review and/or a treatment/management plan and/or chemotherapy. |
| **Denominator** | The total number of GI cancer patients in Manitoba diagnosed during Jan-Dec 2019 who fall into these categories: Rectal cancers (stage II/III and neoadjuvant RT within 120 days before surgery), Colorectal cancers (stage IV and surgery within 1 year of diagnosis), Neuroendocrine tumours (stage III/IV), Pancreas cancer (all stages and surgery within 1 year of diagnosis) and gastric cancer (surgery within 1 year of diagnosis) |
| **Numerator** | The number of GI cancer patients across Manitoba who were discussed at a multidisciplinary care team during Jan-Dec 2019 |
| **Stratifications** | Sex (male, female), Regional Health Authority (Winnipeg, Interlake-Eastern, Southern, Prairie-Mountain, Northern RHA), age group (20-49, 50-59, 60-69, 70-79, 80+) |
| **Comments** | Re denominator: i) Duplicate patients (if a patient belongs in more than one of the listed categories) have been removed ii) Patients not seen at CCMB have been removed. |
|  | | |
| ON | **Jurisdictional target** | Yes – 80% |
| **Definition** | Percent of GI MCCs that are standards concordant.  The denominator is not rectal patients, it's total GI MCC's.  A standards concordant MCC takes place at least every other week, with the appropriate administrative staff assigned and with the recommended clinical participation; this includes medical oncology, radiation oncology, surgery, radiology and pathology for gastrointestinal cancer patients. Each MCC is assigned a score based on the concordance with the standard. |
| **Timeframe** | April 1, 2019 - March 31, 2020 |
| **Definition of Multidisciplinary care team** | In Ontario, multidisciplinary cancer conferences (MCCs) are routinely held to review cases; a multidisciplinary care team attending an MCC can consist of any combination of a medical oncologist, a radiation oncologist, and/or a gynecologic oncologist, and attendance of any particular specialist type can depend on the disease site(s) of the cases being reviewed. |
| **Denominator** | Number of GI MCCs. |
| **Numerator** | Number of GI MCCs that were standards concordant. |
| **Stratifications** | None |
| **Comments** |  |
|  | | |
| PE | **Jurisdictional target** | No target/not provided |
| **Definition** |  |
| **Timeframe** | Cases diagnosed in the period between Jan 1, 2019 and Dec 31, 2019 |
| **Definition of Multidisciplinary care team** | Of the denominator, the number of rectal cancer patients who were referred/discussed by a multi-disciplinary care team (PEI Tumour Board rounds) or had documented discussions with medical and/or radiation oncologist with surgeon prior to treatment |
| **Denominator** | Patients who were diagnosed with rectal cancer (C20.9) in 2019 |
| **Numerator** | Patients discussed at multidisciplinary rounds or discussions |
| **Stratifications** |  |
| **Comments** | 1. The rectal cancers were all cases diagnosed in 2019 (discussions occurred within a few months into 2020).  2. All collected recto-sigmoid cancers (C19.9) were double checked with registrars to figure out if any of these changed to rectal cancers (20.9) as classification could change with more information.  3. Age divided into <50 to evaluate if young patients with CRC were discussed more often than older patients (50+).  4. A chart review template was developed for auditing multidisciplinary discussions between oncologists and surgeons and other specialists prior to treatment. If there was no documented discussions or rounds but only consults/referral letters, then the case was not included in a multidisciplinary discussion. |
|  | | |
| NL | **Jurisdictional target** | No target/not provided |
| **Definition** | Percentage of rectal cancer patients who were referred/discussed by a multidisciplinary care team prior to treatment |
| **Timeframe** | 2019 diagnosis year |
| **Definition of Multidisciplinary care team** | MDT is defined as GI tumour board committee |
| **Denominator** | Number of patients diagnosed with stages 1 to 3 rectal cancer in NL in 2019 |
| **Numerator** | Number of patients diagnosed with stages 1 to 3 rectal cancer in 2019 that were discussed at least one time at Gastrointestinal (GI) tumour board committee |
| **Stratifications** |  |
| **Comments** | 1. Exclusion criteria: a). Patients under 18 years of age; b). non-invasive cancers; c). cases diagnosed outside NL; e) NL residents discussed at tumour board/MDT outside of province; f) missing or invalid HCNs. g) histological types: 9050-9055, 9140, 9590-9992  2. Can only capture cases treated at Dr. H. Bliss Murphy Cancer Centre, St. John's, as this is the only location that have tumour board committee.  3. ICD-O3 code for rectal cancer is 20.9. Algorithm: Patient healthcare numbers (HCNs) were parsed and extracted from GI tumour board committee notes (MS Word documents) between January 1, 2019 and Feb 1, 2020. HCNs were linked to a cohort of rectal cancer patients from the 2019 NL Cancer Registry to identify number of rectal cancer patients discussed at GI tumour board.  3. Tumour board files contained 18 missing or invalid HCNs (~ 2.6%); these patients could not be linked to Cancer Registry to determine cancer type, therefore excluded from analysis.  4. A patient may have been discussed multiple times at tumour board over the specified time period. This indicator does not capture frequency of discussions but rather if a patient were discussed at least one time.  5. Information from tumour board notes were captured up to February 2020, this was to account for rectal cancer patients diagnosed in late 2019 but not discussed at tumour board until sometime in the following year. 6. Patients may have been diagnosed with more than one GI cancer, without clinical chart audits there is no way to determine whether a patient being discussed at GI tumour board was for their rectal cancer diagnosis. 6. Clinical characteristics may play a factor in determining if a patient is discussed at tumour board and, therefore, may have confounding effects on results - please interpret results with caution. |
| **Pediatric Cancer** | | |
| MB | **Jurisdictional target** | No target/not provided |
| **Definition** | None. |
| **Timeframe** | Jan-Dec 2019 |
| **Definition of pediatric cancer patients** | Manitobans diagnosed with an invasive cancer that are 16 years old or younger |
| **Definition of Multidisciplinary care team** | Pediatric case conferences are attended by pediatric oncologists, surgeons, neurosurgeons, pathologists, hematopathologists, radiologists, physician assistants, geneticists, nursing staff, pharmacists, social workers and members of the data management office. |
| **Denominator** | Total number of Manitoban pediatric cancer patients diagnosed in 2019 (excluding patients diagnosed at the end of 2019 who were discussed by a multidisciplinary team in 2020) |
| **Numerator** | Total number of Manitoban pediatric cancer patients diagnosed in 2019 and discussed by a multidisciplinary care team in 2019 |
| **Stratifications** | Sex (male, female), age group (0-3, 4-6, 7-12, 13-16), Regional Health Authority (Winnipeg, Interlake-Eastern, Southern, Prairie-Mountain, Northern RHAs |
| **Comments** | Case conferences may be held prior and/or during the patient's treatment. |
|  | | |
| ON | **Jurisdictional target** | No target |
| **Definition** | Estimated percentage of pediatric patients with cancer who were discussed by a multidisciplinary care team **within 1 month of treatment initiation** and **at any point in time** (defined as at key points in the treatment when decisions are required) |
| **Timeframe** | April 1, 2020 to March 31, 2021 |
| **Definition of pediatric cancer patients** | Any child or adolescent, aged 0–18 years, diagnosed with cancer or benign CNS tumour, treated in a specialized childhood cancer program in Ontario |
| **Definition of Multidisciplinary care team** | A high-level definition of multidisciplinary care team was used for the purposes of initial baseline estimation in Ontario, in order to understand the current status. For this report, a multidisciplinary care team was defined as discussion by at least two disciplines, in addition to a pediatric hematologist/oncologist. |
| **Denominator** | Average number of children and adolescents, diagnosed with cancer and treated in a specialized childhood cancer program in Ontario per year, 2016-2020 (Data Source: POGO's Networked Information System, POGONIS, April 2021 extract) |
| **Numerator** | Estimated number of children and adolescents with cancer who are discussed by a multidisciplinary care team within 1 month of treatment initiation and at any point in time |
| **Stratifications** | Treatment phase (within 1 month of treatment initiation, at any point in time (defined as key points in the treatment when decisions are required) |
| **Comments** | 1) This indicator is estimated based on:  a) the estimated percentage of children who are discussed in multidisciplinary tumour boards, provided to POGO by Tumour Board Leads in each of the five specialized childhood cancer programs in Ontario through semi-structured interviews (May-June, 2021);  b) case numbers in the specialized childhood cancer programs in Ontario (from the POGO Networked Information System (POGONIS), April, 2021 extract); specifically, the average number of children and adolescents diagnosed with cancer and treated in a specialized childhood cancer program in Ontario per year, 2016–2020 (for newly diagnosed patients)  2) Estimated percentages were rounded up or down to the nearest multiple of five. |
|  | | |
| NS | **Jurisdictional target** | No target/not provided |
| **Definition** | Percentage of pediatric new oncology cases seen in Nova Scotia with documented multidisciplinary tumour board rounds prior to initiation of treatment in 2019-2020 |
| **Timeframe** | 2019-2020 |
| **Definition of pediatric cancer patients** | For this chart audit pediatric cancer patients were defined as any patients diagnosed and treatment initiated at the IWK Health Centre. Any patients who were not diagnosed with leukemia or brain tumors were included, i.e., Sarcomas, lymphomas etc. |
| **Definition of Multidisciplinary care team** | Multi-disciplinary was defined as having 3 or more different professional designations (apart from the oncologist), most often included radiation oncologist, diagnostic imaging, pathology, surgery |
| **Denominator** | Solid Tumors: number of patients diagnosed with cancer that is not Brain or Leukemia (sarcomas, lymphomas, other) |
| **Numerator** | Number of patients with documented multi-disciplinary health care providers in attendance |
| **Stratifications** | None |
| **Comments** | The IWK Health Centre is the tertiary centre for pediatric cancers for all 3 of the Maritime Provinces: Prince Edward Island, New Brunswick, and Nova Scotia. There are 3 formal types of rounds for oncology patients: Solid Tumors, Brain Tumor and Leukemia Rounds. Leukemia rounds are held most often after the treatment has been initiated as there are very clear protocols/standards of care. Brain Tumor rounds are held often after surgery has been completed on the patient. Solid tumor board rounds are held most often prior to initiation of treatment. The definition of multi-disciplinary care is not well defined for this indicator and all rounds held at the IWK do not keep complete records of attendees. For Solid tumor rounds shared care partners (local pediatricians, allied health and patient navigators are often invited to attend). Often specialist physicians are documented as attending but allied health are not documented. For this indicator we will present data that is fairly easily to access, for Solid tumors. |
|  | | |
| PE | **Jurisdictional target** | No target/not provided |
| **Definition** | Percentage of pediatric cancer patients who were discussed at multidisciplinary discussions |
| **Timeframe** | Cases diagnosed in the period between Jan 1, 2019 and Dec 31, 2019. |
| **Definition of pediatric cancer patients** | Patients <18 years of age. |
| **Definition of Multidisciplinary care team** | Multidisciplinary care is divided into two types. Since PEI pediatric patients are treated in Halifax at the IWK, there is a possibility that they are discussed in their pediatric oncology rounds with multiple specialist physicians. In addition, almost all PEI pediatric patients were discussed at the pediatric oncology rounds in the pediatric department in Charlottetown. These rounds had a multidisciplinary team. They included pediatricians, pediatric nurses, pharmacists, OTs, PTs, Dieticians, Social Workers and others depending on the patient’s case. |
| **Denominator** | Number of pediatric patients not treated in the adult cancer treatment centre |
| **Numerator** | Number of pediatric patients not treated in the adult cancer treatment centre who were discussed at multidisciplinary discussions at IWK Pediatric Oncology Department in Halifax and/or the Pediatric clinic at QEH in Charlottetown |
| **Stratifications** |  |
| **Comments** | 1. A few patients were diagnosed at <18 years but are treated as adults depending on the cancer and the situation. These patients were not counted as pediatric cases.  2. Results included all pediatric patients who have been discussed in either Halifax Pediatric Oncology rounds and/or at QEH Pediatric Rounds. The two types of multidisciplinary discussions were calculated.  3. The patients discussed at QEH only were the more common types of pediatric cancers that were less complicated. Most of these cases were leukemia. |
|  | | |
| NL | **Jurisdictional target** | No target/not provided |
| **Definition** | Percentage of pediatric cancer patients who were discussed by a multidisciplinary care team. |
| **Timeframe** | Diagnosed in 2019 and discussed by the end of February 2020. |
| **Definition of pediatric cancer patients** | Patients aged 18 years or younger who were diagnosed with any invasive cancer in calendar year 2019 |
| **Definition of Multidisciplinary care team** | Patient discussed at tumour board meeting which had a minimum of 5 disciplines in attendance. |
| **Denominator** | Number of pediatric patients diagnosed with cancer in NL in 2019 |
| **Numerator** | Number of patients from denominator discussed by multidisciplinary team. |
| **Stratifications** |  |
| **Comments** | 1. Exclusion criteria: a). patients 19 years or older; b). Cases diagnosed outside NL; c). Non-melanoma skin cancers; d). non-invasive cancers: e) NL residents discussed at tumour board/MDT outside of province.  2. Can only capture cases treated at Janeway Pediatric Hospital as this is the only location that have a pediatric tumour board committee.  3. Data were captured through manual chart review process conducted by pediatric team at Janeway Pediatric Hospital in St. John's, NL.  4. Stratification is unavailable due to small counts and privacy restrictions.  5. Patients discussed at tumour board in 2019 may have been diagnosed in previous years.  6. Denominator includes all invasive colorectal cancer diagnosis in 2019 regardless of stage, histology, morphology and other clinical characteristics; potential confounding bias may be present for similar reasons as discussed in colorectal MDT.  7. A patient may have been discussed multiple times at tumour board over the specified time period. This indicator does not capture frequency of discussions but rather if a patient were discussed at least one time.  8. This indicator is a ratio (i.e. not percentage) since we cannot determine if a patient discussed at tumour board in 2019 was diagnosed in 2019.  9. Interpretation: 0.93 pediatric cancer cases were discussed at tumour board committee for everyone pediatric cancer case diagnosed in 2019.  NOTE: Will update indicator when new information is received. |

## 

## Action 2: Eliminate low-benefit practices and adopt high-value practices

### Screening outside of guidelines for breast and cervical cancer

Data Source: Provincial cancer agencies and programs

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| --- | --- | --- |
| **Jurisdiction** | **Item** | **Description** |
| **Breast Cancer – Based on Age Group** | | |
| BC | **Jurisdictional target** | No target/not provided |
| **Definition** | Percentage of BC Cancer Breast Screening Program screening mammograms for women aged 30-49, living in British Columbia |
| **Timeframe** | January 1 – December 31, 2018 |
| **Types of screening tests included** | Bilateral mammograms |
| **Denominator** | Total number of BC Cancer Breast Screening Program screening mammograms from January 1 to December 31, 2018 |
| **Numerator** | Total number of BC Cancer Breast Screening Program screening mammograms completed for women, ages 30-49, from January 1 to December 31, 2018 |
| **Stratifications** | Age group (30-39, 40-49) |
| **Comments** | Breast: We currently do not have access to MSP bilateral mammography fee-for-service item 8611 data for women ages 30-49, therefore, the interim data being provided only includes bilateral mammography utilization within the BC Cancer Breast Screening Program. |
|  | | |
| AB | **Jurisdictional target** | No target/not provided |
| **Definition** | Percentage of Alberta women, 40-49 years old, who had completed at least one screening mammogram (Breast Cancer Screening Annual Uptake Rate) |
| **Timeframe** | 2019 |
| **Types of screening tests included** | Screening mammography only |
| **Denominator** | Total number of Alberta women, 40-49 years old, in a one-year period. |
| **Numerator** | Total number of Alberta women, 40-49 years old, who have completed at least one screening mammogram in a given calendar year |
| **Stratifications** | Health zone (zones 1-5, unknown) |
| **Comments** | 1) In our provincial guidelines (and CTFPHC breast cancer screening guidelines), women aged 40-49 can have breast cancer screening as long as women have discussions with their providers and prefer to be screened. Therefore, technically they are not screened out of the guidelines. Some of these women may be screened because of family history as per guidelines.  2) Data accessed on Nov 26th, 2020. |
|  | | |
| SK | **Jurisdictional target** | No target/not provided |
| **Definition** | Percentage of women who were aged < 50 years1 or >=70 years2, among all women screened for breast cancer |
| **Timeframe** | 1 January - 31 December 2019/2019 calendar year (SPBC screens)  1 April 2019 - 31 March 2020/2019-2020 fiscal year (screens outside SPBC) |
| **Types of screening tests included** | Breast Cancer Screening: Mammograms |
| **Denominator** | All women screened for breast cancer during 2019 |
| **Numerator** | Of the denominator, number <50, or ≥70 |
| **Stratifications** | Age group (<50, =>70, 70-74)\*screen status (SPBC screen, screened outside SPBC) |
| **Comments** | Caveats to the above specifications:  1Women are typically invited to screen when they turn 50 years of age; however, the rotating mobile bus schedule allows for women < 50 to participate  2Women aged 70-74 who participated in the Screening Program for Breast Cancer prior to age 70 are allowed to continue screening; women aged 70-74 who have not participated in the screening program before age 70 are not invited. All letters stop at age 74 years.  Assumption: All external bilateral mammograms are considered to be screens and not for diagnostic testing.  • Screen counts for the Screening Program for Breast Cancer (SPBC) are based on the 2019 calendar year (Data Source: SPBC database). Bilateral mammogram counts done outside the SPBC are based on the 2019-2020 fiscal year (Data Source: Saskatchewan Ministry of Health, Medical Services Branch database).  • Data based on the number of women is not available for screens done outside the SPBC. |
|  | | |
| MB | **Jurisdictional target** | No target/not provided |
| **Definition** | % women who were screened outside of guidelines for breast cancer, by age |
| **Timeframe** | Women aged 40-49 or >74 (as of June 1, 2019) |
| **Types of screening tests included** | Mammogram |
| **Denominator** | # of women aged 40-49 or >74 (as of June 1, 2019) |
| **Numerator** | # of women aged 40-49 or >74 that received a BreastCheck mammogram between January 1, 2017 and December 31, 2018 |
| **Stratifications** | Regional health authority (Winnipeg, Interlake-Eastern, Southern, Prairie-Mountain, Northern RHA) |
| **Comments** | Women aged 40-49 are outside of guidelines for routine breast cancer screening **unless** they are  at increased risk due to family or personal history of Lobular carcinoma in situ (LCIS),  Atypical Lobular or Ductal Hyperplasia (ALH or ADH) or BRCA 1/2. Additionally, BreastCheck provides screening mammograms for women in low access areas in an effort to increase access to diagnostic imaging (ex: via mobile clinics in remote communities). Thus, women aged 40-49 in low access areas would not be considered outside of guidelines.  Routine breast cancer screening is not recommended for women >74 but is permitted (women > 74 can self-refer and attend screening at BreastCheck as long as there are no physical/cognitive limitations that would prevent test completion).  June 1 2019: This is the midpoint date in the year which Manitoba Population Health uses to calculate age |
|  | | |
| ON | **Jurisdictional target** | No target/not provided |
| **Definition** | Percentage of women screened with mammography in the 40-49 age group |
| **Timeframe** | This indicator is presented by calendar year (January 1 - December 31) for 2016, 2017, 2018 and 2019. Please refer to the denominator and numerator descriptions below, for other relevant timeframes. |
| **Types of screening tests included** | The indicator includes mammograms reported in the Ontario Breast Screening Program (OBSP) and Ontario Health Insurance Plan (OHIP) |
| **Denominator** | Derived from the Primary Care Population Dataset (PCPOP), the denominator(s) include all women in Ontario who were 40-49 years of age on index date, corresponding to January 1st of 2016, 2017, 2018, and 2019. Women were further excluded if they had:  (1) an invalid ICES key number (IKN),  (2) missing date of birth,  (3) missing postal code,  (4) missing sex,  (5) ineligible for OHIP,  (6) no contact with the health care system for an extended period of time,  (7) < 40 or > 49 years of age on index date,  (8) any previous history of breast cancer in the Ontario Cancer Registry (OCR),  (9) any previous history of mastectomy in the Discharge Abstract Database (DAD) or Same Day Surgery Database (SDS), or  (10) an OHIP fee code indicating mammogram exclusion within 2-years of the index date. |
| **Numerator** | Women 40-49 years of age with at least one record of mammography in OBSP or OHIP, between January 1 and December 31 of each year |
| **Stratifications** |  |
| **Comments** | Data Sources:  CONTACT  Discharge Abstract Database  Ontario Breast Screening Program  Ontario Cancer Registry  Ontario Health Insurance Plan  Postal Code Conversion File  Primary Care Population Dataset  PCPOP is a population level dataset that includes all people in Ontario who are deemed alive and eligible as of a reference date. From 2008 and onwards, PCPOP is created bi-annually; such cohorts capture people who are alive and eligible for OHIP as of a reference date, have had some form of recent contact with the healthcare system (see below), and excludes non-Ontario residents.  Registered Persons Database  We use the date of last contact to adjust RPDB population counts to approximate population (total) estimates reported by Statistics Canada. The last contact threshold is 11 years for 2016/17 to 2018/19, and 10 years for 2019/20, indexed to March 31 of the respective year.  Same Day Surgery Database  Each woman was counted once regardless of the number of mammogram tests performed in the year |
|  | | |
| NB | **Jurisdictional target** | No target/not provided |
| **Definition** | Percentage of women aged 40+ who received breast cancer screening |
| **Timeframe** | January 1, 2018-June 30, 2020 |
| **Types of screening tests included** | Screening episodes occurred including multiple screens |
| **Denominator** | Statistics Canada Population Estimators |
| **Numerator** | Screening episodes occurred including multiple screens |
| **Stratifications** | Age group (40-49, 50-74, 75+) |
| **Comments** | For breast cancer screening, screening data is incomplete & may be affected by COVID pandemic i.e., delays in data submission. |
|  | | |
| PE | **Jurisdictional target** | No target. There was no target for the proportion of screens in the 40-49 year-olds. Women in that age group were invited to screen by self-referral. All women were given information on the reasons for being screened or not screened to make sure they understood the advantages and disadvantages of screening. |
| **Definition** | Percentage of women screened with mammography in the 40-49 age group out of all women in PEI age 40-49 in 2019 |
| **Timeframe** | All mammography screens done in 2019 |
| **Types of screening tests included** | Mammography |
| **Denominator** | All women in PEI age 40-49 in 2019. Women with previous breast cancer were excluded) |
| **Numerator** | Number of women aged 40-49 screened by mammography in 2019 |
| **Stratifications** | Age group (40-49, 40-44, 45-49) |
| **Comments** | Breast cancer screening data came directly from the Diagnostic Imaging Department. Population of PEI women aged 40-49 came from Statistics Canada. If a woman had two screens in 2019, she was only counted once. Annual breast cancer screening was calculated as women 11-18 months after their previous screen to allow for scheduling issues. |
|  | | |
| NL | **Jurisdictional target** | No target/not provided |
| **Definition** | Percentage of women who received at least one bilateral mammogram in the 40-49 age group |
| **Timeframe** | 2019 calendar year |
| **Types of screening tests included** | Mammography |
| **Denominator** | Number of women who received at least one bilateral mammogram in 2019 |
| **Numerator** | Number of women aged 40-49 who had at least one bilateral mammogram in 2019 |
| **Stratifications** | None |
| **Comments** | NL is unsure what is meant by age-group or frequency-based. NL decided to use age-based since the breast screening outside of guidelines indicator is defined over a specific age group (i.e., 40-49), but are unsure if this is correct. |
| **Breast Cancer – Based on Frequency** | | |
| AB | **Jurisdictional target** | No target/not provided |
| **Definition** | Annual Return to Screen Rate |
| **Timeframe** | 2019 |
| **Types of screening tests included** | Screening mammography only |
| **Denominator** | Number of breast screening mammography performed for women 50-74 in target measurement timeframe with normal results (BI-RADS 1&2). |
| **Numerator** | Number of breast screening mammography performed with one-year return to screen recommendation from radiologist for women 50-74 in target measurement timeframe with normal results (BI-RADS 1&2). |
| **Stratifications** | Health zone (zones 1-5, unknown), age group (50-55, 56-60, 61-65, 66-70, 71-74) |
| **Comments** | See comments above for breast cancer – based on age group. |
|  | | |
| MB | **Jurisdictional target** | No target/not provided |
| **Definition** | % women who were screened outside of guidelines for breast cancer, by interval |
| **Timeframe** | Women aged 50-72 (between Jan 1, 2017-Dec 31, 2018) |
| **Types of screening tests included** | Mammogram |
| **Denominator** | # of women aged 50-72 (between January 1, 2017-December 31, 2018) who completed a screening mammogram **and received a normal screening result** with a recommendation to complete an index mammogram in 24 months |
| **Numerator** | A subset of the population in the denominator who completed two or more screening mammograms within 24 months of the index mammogram date selected in the denominator |
| **Stratifications** | Regional health authority (Winnipeg, Non-Winnipeg) |
| **Comments** | Numerator and denominator exclude women who become ineligible for screening between the time period in the denominator and the end of 24-month follow-up in the numerator |
|  | | |
| ON | **Jurisdictional target** | No target/not provided |
| **Definition** | Percentage of Ontario Breast Screening Program (OBSP) participants ages 50-72, with a biennial screening recall recommendation who had a subsequent OBSP screening mammogram within 18 months of the previous mammogram |
| **Timeframe** | Year of OBSP screening mammogram with a biennial screening recall recommendation - 2018 |
| **Types of screening tests included** | The indicator includes screening mammograms reported in the OBSP |
| **Denominator** | Number of OBSP participants ages 50-72, with a biennial screening recall recommendation  • Index date was defined as the date of the OBSP screening mammogram with a biennial screening recall recommendation.  • Age is based on the index date.  Exclusions:  • OBSP participants with a missing or invalid health information number (HIN) and/or date of birth.  • OBSP participants who died, had a breast cancer diagnosis or a mastectomy within 18 months of the index date and were not re-screened. |
| **Numerator** | Number of OBSP participants ages 50-72, with a biennial screening recall recommendation who had a subsequent OBSP screening mammogram within 18 months of a previous OBSP mammogram |
| **Stratifications** | Age group (50-59. 60-69, 70-72) |
| **Comments** | From March to May 2020, OBSP screening mammograms were deferred to be consistent with the Ministry of Health’s Directive 2 that all non-essential healthcare services be ceased/reduced in light of the COVID-19 pandemic. Since May 2020, some OBSP sites have provided OBSP screening mammography at reduced capacity. The decrease in screening likely impacted the screening behaviour of people screened in 2018 who were due for their biennial screen in 2020. As such, the percentage of women who were screened outside of guidelines based on frequency ("Overuse") may have a lower value than it used to be.  Data Sources   * Integrated Client Management System (ICMS): OBSP screening mammogram data for 2018-2020 * Ontario Cancer Registry (OCR): Breast cancer data for 2018-2020 * Ontario Health Insurance Plan Claims History Database (OHIP CHDB): Mastectomy claims in 2018-2020 * Registered Persons Database (RPDB): Death data for 2018-2020   Additional Notes   * This indicator has a two-year data lag to allow for 18 months of follow-up after the index screening date |
|  | | |
| PE | **Jurisdictional target** | No target. There was no target for the proportion of women aged 50-74 who screen on an annual basis. |
| **Definition** | Percentage of women screened with mammography on an annual basis |
| **Timeframe** | January 1, 2018-June 30, 2020 (18 months due to scheduling issues) |
| **Types of screening tests included** | Mammography |
| **Denominator** | Number of women screened in the breast cancer screening program in 2018 |
| **Numerator** | Number of women who had a second screen between 11 and 18 months after their first screen of the year 2018. |
| **Stratifications** | Age group (50-74, 50-59, 60-69, 70-74) |
| **Comments** | Same comments above for breast cancer – based on age group. |
| **Cervical Cancer** | | |
| BC | **Jurisdictional target** | No target/not provided |
| **Definition** | Percentage of Pap tests completed in British Columbia for women between the ages of 18-24 |
| **Timeframe** | 2018: women (aged 18-24 as of screen date) who were screened between Jan 01, 2018 and Dec 31, 2018 |
| **Types of screening tests included** | Pap tests |
| **Denominator** | Total number of Pap tests completed in British Columbia in 2018 |
| **Numerator** | The total number of Pap tests completed for women ages of 18-24 between January 1 and December 31, 2018 |
| **Stratifications** | Age group (18-20, 21-24) |
| **Comments** |  |
|  | | |
| AB | **Jurisdictional target** | No target/not provided |
| **Definition** | Percentage of Alberta women, 18-24 years old, who had completed at least one Pap test (or colposcopy exam) (Cervical Cancer Screening Annual Uptake Rate) |
| **Timeframe** | 2019 |
| **Types of screening tests included** | Pap tests; Colposcopy exams |
| **Denominator** | Total number of Alberta women, aged 18-24 years old, in a target year  Inclusions:  • Alberta women aged 18-24 at the index date. Index date is defined as July 1st in the target year, e.g., calendar year: July 1st, 2019 for year 2019 |
| **Numerator** | Total number of Alberta screen-eligible women, 18-24 years old, who have completed at least one Pap test (or colposcopy exam) in a given calendar year, e.g., January 1st, 2019 – December 31st, 2019 for year 2019 |
| **Stratifications** | Age group (18-20, 21-24), Health zone (zones 1-5, unknown) |
| **Comments** | 1) For cervical cancer screening, AB was the first province in the country to move to age 25-69, but we still consider screening at age 21-24 optional (we agree that cervical cancer screening for women aged 18-20 is out of the guidelines and is inappropriate.  2) Data accessed on Nov 26th, 2020. |
|  | | |
| SK | **Jurisdictional target** | No target/not provided |
| **Definition** | Percentage of women screened outside of guidelines for cervical cancer |
| **Timeframe** | 1 January – 31 December 2019 |
| **Types of screening tests included** | Pap tests only |
| **Denominator** | Number of women who were screening in the past calendar year (January 1, 2019 - December 31, 2019), 18 years of age and older. |
| **Numerator** | Number of women screened in the past calendar year (Jan 1 2019 - December 31, 2019) who were 18-20 years of age  Number of women screened in the same timeframe who were 21-24 years of age. |
| **Stratifications** | Age group (18-20, 21-24, 18-24) |
| **Comments** | Exclusion Criteria Includes: women with a missing or invalid HSN, date of birth, or postal code. |
|  | | |
| MB | **Jurisdictional target** | No target/not provided |
| **Definition** | % of women who were screened outside of guidelines for cervical cancer, by age  % of women who were screened outside of guidelines for cervical cancer, by interval |
| **Timeframe** | Based on age group: Women aged 18-20 or >69 (as of June 1 2019)  Based on interval: Women aged 21-69 (between Jan 1 2014-Dec 31 2016) |
| **Types of screening tests included** | Pap |
| **Denominator** | Based on age group: # of women aged 18-20 or >69 (as of June 1 2019)  Based on interval: # of women aged 21-69 (between Jan 1 2014-Dec 31 2016) who completed an index Pap test and had a **normal result** |
| **Numerator** | Based on age group: # of women aged 18-20 or >69 that received an Index Pap test between Jan 1, 2014 and Dec 31, 2016  Based on interval: A subset of the population in the denominator who had two or more screening Pap tests completed within 36 months of the index Pap test selected in denominator |
| **Stratifications** | None |
| **Comments** | Based on age group:  Women aged 18-20 are outside of guidelines for routine cervical cancer screening. Women aged >69 are outside of guidelines for routine cervical cancer screening **unless** they have not routinely screened negative (at least 3 negative Paps) in the past 10 years  June 1 2019: This is the midpoint date in the year which Manitoba Population Health uses to calculate age  Based on interval:  Two or more screening Pap tests is not outside guidelines for individuals who are at increased risk due to personal history (immunocompromised, HIV positive, previous high-grade biopsy, previous cervical cancer) or had an abnormal or unsatisfactory Pap result).  Numerator includes women whose second Pap test in the 36-month time period had a normal result, but the third Pap test in the 36-month time period could have any result. Also, numerator and denominator exclude women whose provincial health coverage lapsed between the time period in the denominator and the end of 36-month follow-up in the numerator. |
|  | | |
| ON | **Jurisdictional target** | No target/not provided |
| **Definition** | Percentage of women who received a Pap test in the 18 - < 20.5 and 20.5-24 age groups |
| **Timeframe** | This indicator is presented by calendar year (January 1 - December 31) for 2016, 2017, 2018 and 2019. Please refer to the denominator and numerator descriptions below, for other relevant timeframes. |
| **Types of screening tests included** | The indicator includes Papanicolaou (Pap) tests reported in Ontario Health Insurance Plan (OHIP) |
| **Denominator** | Derived from the Primary Care Population Dataset (PCPOP), the denominator(s) include all women in Ontario who were 18-24 years of age on index date, corresponding to January 1st of 2016, 2017, 2018, and 2019. Women were further excluded if they had: (1) an invalid ICES key number (IKN), (2) missing date of birth, (3) missing postal code, (4) ineligible for OHIP, (5) no contact with the health care system for an extended period of time, (6) < 18 or > 24 years of age on index date, (7) any previous history of cervical cancer in the Ontario Cancer Registry (OCR), or (8) a previous history of hysterectomy or cervicectomy in OHIP, with a lookback from index date to 2010. |
| **Numerator** | Women aged 18-24 with at least one record of Pap test in OHIP between January 1 and December 31 of each year |
| **Stratifications** | Age group (18-20.5, 20.5-24, 18-24) |
| **Comments** | Data Sources:  CONTACT  Ontario Cancer Registry  Ontario Health Insurance Plan  Postal Code Conversion File  Primary Care Population Dataset (PCPOP)  PCPOP is a population level dataset that includes all people in Ontario who are deemed alive and eligible as of a reference date. From 2008 and onwards, PCPOP is created bi-annually; such cohorts capture people who are alive and eligible for OHIP as of a reference date, have had some form of recent contact with the healthcare system (see below), and excludes non-Ontario residents.  We use the date of last contact to adjust RPDB population counts to approximate population (total) estimates reported by Statistics Canada. The last contact threshold is 11 years for 2016/17 to 2018/19, and 10 years for 2019/20, indexed to March 31 of the respective year.  Each woman was counted once regardless of the number of Pap tests performed in the year  Registered Persons Database |
|  | | |
| NB | **Jurisdictional target** | No target/not provided |
| **Definition** | Percentage of women aged 18+ who received cervical cancer screening |
| **Timeframe** | January 1, 2019-June 30, 2020 |
| **Types of screening tests included** | Pap tests |
| **Denominator** | Statistics Canada Population Estimators |
| **Numerator** | Number of Pap tests |
| **Stratifications** | Age group (18-20, 21-24, 25-69, 69+) |
| **Comments** | For cervical cancer screening, Miramichi lab stopped processing pap tests August 2019 - all subsequent paps are being sent to Moncton lab. |
|  | | |
| NS | **Jurisdictional target** | No target/not provided |
| **Definition** | Percentage of women under 25 years old who received a PAP test |
| **Timeframe** | Smear dates between 01Jul2016 and 31Dec2019 |
| **Types of screening tests included** | Only PAP tests are included |
| **Denominator** | Denominators are from intercensal population estimates for Women under 25 years old in Nova Scotia, 2017 population year (Stats Canada) |
| **Numerator** | Women under 25 years with at least one record of PAP test screen From CCASPER (provincial cervical screening database) 01Jul2016 and 31Dec2019 |
| **Stratifications** | Age group (<18, 18-20, 21-24) |
| **Comments** | Numerator is everyone with a PAP test under the age of 25 (i.e., Maximum age is 24). The denominator is the population under the age of 25 from 2017 census data. Denominator has not been hysterectomy cleared. |
|  | | |
| PE | **Jurisdictional target** | Current PEI cervical screening guidelines recommend women who have been sexually active start screening at age 25. No target is provided for this indicator. |
| **Definition** | Percentage of women screened with PAP test in the in the 18-20 & 21-24 age group. |
| **Timeframe** | All cervical screens performed in Jan 1, 2017 though Dec 31, 2019 (36 month period). |
| **Types of screening tests included** | Pap tests for all women regardless of symptomatic or asymptomatic. |
| **Denominator** | All women in PEI age 18-20 and 21-24 in 2018 which is the middle of the time period (2017-2019). |
| **Numerator** | Number of women aged 18-20 and 21-24 screened using pap smear test during the timeframe. |
| **Stratifications** | Age group (18-24, 18-20, 21-24) |
| **Comments** | Cervical screening data included all women who had had a Pap test regardless of symptomatic (diagnostic) or asymptomatic (screening). Therefore, there was no chance to ever meet the target. In addition, the age for screening started at 21 years old until 2020. In 2020, the updated age to start screening was 25. Women with cervical cancer or hysterectomies were not excluded. |
|  | | |
| NL | **Jurisdictional target** | No target/not provided |
| **Definition** | Percentage of women who had a pap smear who were under 21 or over 69 years of age |
| **Timeframe** | 2019 Calendar year |
| **Types of screening tests included** | Pap smear |
| **Denominator** | Number of women who had a pap smear |
| **Numerator** | Number of women under 21 or over 69 years of age who had a pap smear in 2019 |
| **Stratifications** | Age group (<21, 21-24, 25-69, >69) |
| **Comments** | Cervical Screening:  1. Women with a previous diagnosis of invasive or in situ cervical cancer were excluded.  2. ICD-O3 codes for cervical cancers include: C53.0-C53.9.  3. NL cervical screening age guidelines (21-69) were used instead of Canadian guidelines (25-69). Stratification allows for the consideration of the number of individuals screened outside of the Canadian guidelines but within NL guidelines (i.e. within the 21-24 age range). |

# **Priority 4: Eliminate barriers to people getting the care they need**

## Action 1: Provide better services and care adapted to the specific needs of underserviced groups

### Percentage of cancer patients in underserviced groups who have access to patient navigator services or other programs/services that address their needs

Data Source: Provincial cancer agencies and programs

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| --- | --- | --- |
| **Jurisdiction** | **Item** | **Description** |
| AB | **Jurisdictional target** | No target/not provided |
| **Definition** | Percentage of cancer patients living in rural/remote area in Alberta who utilized nurse navigator service that address their needs |
| **Timeframe** | 2019 year of appointment/visit |
| **Definition of underserviced group** | Patients who live in rural/remote area defined by Alberta Health Services postal code file |
| **Navigator Services** | Nurse Navigators provide support during times of transition, care continuity & coordination, patient and family education, patient referral and triage, as well as local community liaison |
| **Denominator** | Number of cancer patients who lived in rural/remote areas in Alberta and had at least one appointment/visit at any cancer centres in 2019 |
| **Numerator** | Number of cancer patients who lived in rural/remote areas in Alberta and utilized nurse navigator service in 2019 |
| **Stratifications** | Health zone (1-5), Age group (18-54, 55-64, 65-74, 75-84, 85+) |
| **Comments** | Alberta adult residents who lived in rural/remote areas and had at least one appointment with Cancer Care Alberta clinics in 2019 were included. Among those, patients who had at least one appointment with Nurse Navigators were counted as numerator. Urban/rural status for Local Geography Boundaries was created by examining population densities and travel times to a variety of health services. There is no rural/remote area in Zone 4. |
|  | | |
| MB | **Jurisdictional target** | No target/not provided |
| **Definition** | Since all cancer patients in Manitoba have access to patient Navigator Services, indicator wording has been modified to reflect access to Navigation services: Ratio of rural/remote cancer patients who have accessed Navigation Services in 2019 |
| **Timeframe** | Jan to Dec 2019 |
| **Definition of underserviced group** | "Underserviced" populations have been narrowed in scope to patients from rural/remote areas of Manitoba. Regional health authorities (RHAs) are used as a proxy for rural/remote locations. Rural locations are represented by three RHAs: Prairie Mountain, Southern and Interlake-Eastern, while remote is represented by the Northern RHA. The Winnipeg RHA is considered an urban center and is not included |
| **Navigator Services** | Cancer Navigation Services (part of CancerCare Manitoba) is a free resource to all Manitoban cancer patients and their family members. Each regional cancer program includes a Navigation team (nurse navigator, psychosocial oncology clinicians and community engagement liaisons) which offer patient-specific support and/or information. Patients and their family members can either get in touch with Navigation Services directly or be referred by a health professional (https://www.cancercare.mb.ca/Patient-Family/support-services/cancer-navigation-services). |
| **Denominator** | Total number of Manitoba adults diagnosed with any invasive cancer in 2019 |
| **Numerator** | Number of newly diagnosed cancer patients in 2019, who also had a referral to Navigation services in the same year |
| **Stratifications** | Sex (male, female), regional health authority (Interlake-Eastern, Southern, Prairie-Mountain, Northern), age group (<30, 31-40, 41-50, 51-60, 61-70, 71-80, 81-90, 91-100) |
| **Comments** | Churchill is counted as part of the Winnipeg RHA and therefore not included in the calculation of this indicator (During Jan-Dec 2019, there were < 10 Churchill residents who accessed Navigation Services). |

## Action 2: Ensure rural and remote communities have the resources required to better serve their people

### Availability of supportive care services (including psychosocial and/or palliative care) in rural/remote areas

Data Source: Provincial cancer agencies and programs

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| --- | --- | --- |
| **Jurisdiction** | **Item** | **Description** |
| SK | **Jurisdictional target** | No target/not provided |
| **Definition** | Proportion of patients seen at the SCA accessing supportive care services |
| **Timeframe** | 1 January – 31 December 2019 |
| **Definition of supportive services** | Supportive Services include the following types of appointments:  - Dietitian, Psychosocial and SMPCOC appointments  SMPCOC – Symptom Management and Palliative Outpatient Clinic |
| **Definition of rural/remote areas** | Rural is defined as >100km from Regina and Saskatoon  Urban is defined as ≤100km of Regina and Saskatoon |
| **Denominator** | Patients who had at least one consult, follow-up, or treatment at SCA |
| **Numerator** | Patients who had at least one supportive care appointment |
| **Stratifications** | Appointment Type (Dietary, Psychosocial, SMPCOC)  Appointment Location (In-Person, Virtual, Phone, Telehealth)  Diagnosis (Breast, CNS, Colorectal, Lung, Prostate, Gynecological, Hematology, Skin, Other)  Age (19-29, 30-39, 40-49, 50-59, 60-69, 70-79, 80+)  Location (Rural, Urban) |
| **Comments** | Exclusion Criteria:  \* Patients born after 2000/ <19 years of age  Stratification:  Age was calculated based on year of birth. Anyone born in 2000 would be considered 19 in 2019.  Stratification by age and location (rural/urban) are mutually exclusive. Patients are one age group and either live in urban or rural locations.  Stratification by appointment type, appointment location and diagnosis are not mutually exclusive. Patients could have both a dietary and SMPCOC appointment, have been seen both in-person and virtually and have multiple diagnoses. Additionally, further stratifications of virtual appointments are not mutually exclusive as patients could have had both phone and telehealth appointments. |
|  | | |
| MB | **Jurisdictional target** | No target/not provided |
| **Definition** | % of rural/remote cancer patients who accessed psychosocial services in the same fiscal year they got diagnosed |
| **Timeframe** | April 2020 – March 2021 (FY 2020/21) |
| **Definition of supportive services** | This indicator reflects Psychosocial Services |
| **Definition of rural/remote areas** | Regional health authorities (RHAs) are used as a proxy for rural/remote locations. Rural locations are represented by three RHAs: Prairie Mountain, Southern and Interlake-Eastern, while remote is represented by the Northern RHA. The Winnipeg RHA is considered an urban center and is therefore not included |
| **Denominator** | All cancer patients diagnosed in FY 2020/21 |
| **Numerator** | Cancer patients diagnosed in FY 2020/21 who had 1 or more psychosocial oncology (PSO) appointment during the same timeframe |
| **Stratifications** | Sex (male, female), Age (<30, 31-40, 41-50,51-60,61-70,71-80,91-90,91-100), Regional health authority (Interlake-Eastern, Southern, Prairie-Mountain, Northern) |
| **Comments** | The report used to inform this indicator was implemented in 2020 (i.e. earlier timeframes are not available) |
|  | | |
| ON | **Jurisdictional target** | No target/not provided |
| **Definition** | \*\*\*Note that ON separated out this indicator into two:  [1] Percentage of cancer patients from rural/remote areas who received psychosocial oncology services  [2] Percentage of cancer patients from rural/remote areas who received palliative care services. |
| **Timeframe** | [1] Service delivery date: January 1, 2019 – December 31, 2019  Diagnosis date: January 1, 2010 – December 31, 2019  [2] Service delivery date: January 1, 2019 – December 31, 2019  Diagnosis date: January 1, 2010 – December 31, 2019 |
| **Definition of supportive services** | [1] psychosocial oncology services (i.e., consult visits with the following 8 PSO disciplines at Regional Cancer Centres: psychiatrist, psychologist, social worker, spiritual care provider, occupational therapist, physiotherapist, registered dietitian, and speech language pathologist)  [2] palliative care services |
| **Definition of rural/remote areas** | [1] & [2] To identify the remote/rural areas, the Postal Code Conversion File Plus (PCCF+) Version 7C was used. The patients’ postal codes of residence were linked to PCCF+ macro, and the remote/rural areas were identified using the Community Size and Metropolitan Influence Zones (CSizeMIZ) variable in PCCF+. |
| **Denominator** | [1] & [2] Number of patients diagnosed with cancer, alive during reporting time period and living in rural/remote areas |
| **Numerator** | [1] Number of cancer patients in rural/remote areas who received psychosocial oncology services after cancer diagnosis and within the service delivery period (see Measurement Timeframe).  [2] Number of cancer patients in rural/remote areas who received palliative care services after cancer diagnosis and within the service delivery period (see Measurement Timeframe) |
| **Stratifications** | * Diagnosis year * Rural/remote and urban areas |
| **Comments** | [1] Percentage of patients who received psychosocial oncology (PSO) services in 2019 stratified by year of cancer diagnosis and area of residence (remote/rural vs urban) is provided in Table 2. The results show that patients from urban areas had a slightly higher access to PSO services compared to those in rural/remote areas. Further statistical testing showed that the difference between urban and rural/remote areas were statistically significant (at 5% level of significance) for all diagnosis year categories. Also, the diagnosis year breakdown shows that patients who were most recently diagnosed had different access to supportive care than those who were diagnosed a few years earlier. This may be due to the reason that patients who were diagnosed in 2018-2019 were receiving PSO support while seeking treatment at Regional Cancer Centres (RCC) whereas patients who were diagnosed in 2010-2014 were no longer on active treatment at the RCC.  Notes:   * Individuals with missing health card number and/or missing postal codes were excluded from the analysis. * Individuals who were alive for calendar year 2019 were included in the analysis. * Psychosocial services are captured only for services provided at Regional Cancer Centres.   [2] Percentage of patients who received palliative care services in 2019 stratified by year of cancer diagnosis and area of residence (remote/rural vs urban) is provided in Table 2. The results show that patients who were diagnosed between 2010 and 2017 from both remote/rural and urban areas had very similar access to palliative care services. However, palliative care access for patients who were diagnosed recently (i.e., 2018-2019) is slightly higher for patients live in rural area compared to those in urban areas. Further statistical testing showed that there was no evidence of statistically difference in palliative care use for patients who were diagnosed between 2010 and 2017 from remote/rural vs urban areas (at 5% level of significance). However, palliative care access for patients who were diagnosed recently (i.e., 2018-2019) is significantly higher for patients live in rural area compared to those in urban areas (at 5% level of significance). Also, the diagnosis year breakdown shows that patients who were most recently diagnosed had different access to palliative care than those who were diagnosed a few years earlier. This may be due to the reason that patients who were diagnosed in 2018-2019 were receiving palliative care support while seeking treatment whereas patients who were diagnosed in 2010-2014 were no longer on active treatment.  Notes:   * Individuals with missing health card number and/or missing postal codes were excluded from the analysis. * Individuals who were alive for calendar year 2019 were included in the analysis. * Palliative care services include physician claims, hospital admissions, emergency room visits, home care services, continuing care services, and Regional Cancer Centres (RCC) clinic visits. |
|  | | |
| NS (Supportive Care Services) | **Jurisdictional target** | No target/not provided |
| **Definition** | Proportion of respondents who indicated they received the help they needed |
| **Timeframe** | 2020 |
| **Definition of survey question** | Variety of services across the health authority. Specific services were not defined in the survey question. Survey respondents answered a statement “I am receiving as much help as I need in coping with…  • Social and family issues related to cancer  • Emotional issues  • Spiritual Issues  • Practical  • Physical  Response options:  • Yes, I got the help I needed  • No, I did not get as much help as I needed  • I did not need help |
| **Definition of rural/remote areas** | N/A |
| **Denominator** | Respondents who indicated they needed help in questions relating to "I am receiving as much help as I need coping with…”  Excluded: Respondents who indicated ”I did not need help” |
| **Numerator** | Number of respondents who indicated "Yes" they got the help they needed coping by question |
| **Stratifications** | Rural/urban |
| **Comments** | Data from the Nova Scotia Health Cancer Care Program 2020 Patient Satisfaction Survey  Survey Sampling  The Nova Scotia Health Cancer Care Program 2020 Patient Satisfaction Survey sample was identified through appointments in the Nova Scotia Health appointment scheduling systems between 09May2020 and 31Aug2020. Only appointment types and appointments where the patient attended the appointment were retained. A stratified random sample of 1,935 patients were selected from the appointment data to receive the survey. The number of patients were evenly divided among the four Health Management Zones to ensure that zone to zone comparisons could be made. A total of 701 patients responded to the survey. This includes n=442 Active Treatment patients and n=259 patients in follow-up care. |
|  | | |
| NS (Specialist Palliative Care Services) | **Jurisdictional target** | No target/not provided |
| **Definition** | Proportion of Nova Scotians referred to specialist palliative care services |
| **Timeframe** | 2019 |
| **Definition of Specialist Palliative Care Services** | In Nova Scotia, specialist palliative care services are interdisciplinary teams that provide an additional layer of support to enhance the care of patients with life limiting illness with unmet needs that require specialist level care. These teams include palliative care physicians, nurses and social workers who provide support in any setting of care. |
| **Definition of rural/remote areas** | People living in rural communities as defined StatsCan PCCF+ 7D.  Determined by the patient’s residential postal code at time of death |
| **Denominator** | Nova Scotia decedents with cancer cause of death in 2019 as per NS vital stats records |
| **Numerator** | Nova Scotians who died in 2019 had at least one referral to specialist palliative care services |
| **Stratifications** | 1. Rural/Urban Community 2. Status of Referral:  * Referred 14 days or more prior to death * Referred Less than 14 days before death * Not referred |
| **Comments** | Excluded cases with incomplete/no HCN, incomplete/no Postal Code, non-Nova Scotia Postal Code, and deaths in individuals under 18 years of age |

# **Priority 5: Deliver information and supports for people living with cancer, families and caregivers**

## Action 1: Integrate the full spectrum of information and support services to ensure people are fully supported throughout the cancer journey

### 

### Percent of health care professionals with direct access to cancer patient information

Data Source: Provincial cancer agencies and programs

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| --- | --- | --- |
| **Jurisdiction** | **Item** | **Description** |
| MB | **Jurisdictional target** | No target/not provided |
| **Definition** | Percent of family/general practitioners with an active status in ARIA compared to family/general practitioners with access to ARIA. |
| **Timeframe** | Jan-Dec 2019 |
| **Definition of health care professionals** | This indicator limits "health care professional" to family/general practitioners. More specifically, seven physician classifications are included: Family Practitioner, General Practitioner, Physician, Palliative Care Physician, Emergency Medicine Physician, Family Physician in Oncology and Community Cancer Program Network (CCP) Physician (The CCP enables patients living outside of Winnipeg to receive cancer care closer to home). |
| **Definition of direct access** | Access to ARIA is defined as: Physician has an ARIA account (this includes both active and inactive users)  Active ARIA users are those who have logged into ARIA at least once in the last 120 days |
| **Capture access to cancer patient information?** | Not directly. This indicator reports on the proportion of family/general practitioners who have made recent use (<120 days) of the electronic cancer record (ARIA) out of all family/general practitioners who have access to ARIA |
| **Denominator** | Total number of Manitoba family/general practitioners with access to ARIA (includes active and inactive ARIA users) |
| **Numerator** | Number of Manitoba family/general practitioners with an active status in ARIA |
| **Stratifications** | None |
| **Comments** | The electronic cancer record for Manitoba (ARIA) underwent a major cleanup in 2019 that is still ongoing. As a result, the number of users inactivated in 2019 is higher which inflates the above statistic by about 10%. It should also be noted that physicians (especially those working at CCP sites) often have more than one "user group definition"; i.e. an emergency medicine physician may also be a family practitioner. The accuracy of user group definitions (physician types) and active/inactive user counts should improve by next reporting period (in 2022).  Stratifying this indicator by RHA is not possible, given that Manitoba physicians (especially those working at CCP sites) may regularly work at more than one location/RHA. |
|  | | |
| ON | **Jurisdictional target** | No target/not provided |
| **Definition** | Percentage of clinicians with access to clinical viewer in Ontario with treatment data consolidated (including cancer)  Scope changed from 'information only on cancer patients' to 'information available through the provincial electronic health record about all patients (including cancer)' |
| **Timeframe** | As of Sept 30, 2020 (reported quarterly) |
| **Definition of health care professionals** | An eligible user who has been issued credentials by Ontario Health (Digital Services) |
| **Definition of direct access** | Authorized user who can access provincial data assets |
| **Capture access to cancer patient information?** | Includes cancer patients but is not exclusively for this patient population |
| **Denominator** | Authorized users on Sept 30,2020 |
| **Numerator** | Active users on Sept 30, 2020 |
| **Stratifications** | None |
| **Comments** |  |
|  | | |
| NL | **Jurisdictional target** | No target/not provided |
| **Definition** | Percent of health care professionals with direct access to cancer patient information  1. Expanded number of times accessing EHR from at least 20 per year to at least 50 per year. 2. Removed part of the definition which referred to number of times accessed per quarter as it was determined to be redundant. 3. Expanded scope by stratifying by health region. |
| **Timeframe** | 2019 calendar year |
| **Definition of health care professionals** | Primary health care (i.e., family) physician. |
| **Definition of direct access** | Access to NL patients’ electronic medical records via EHR system (i.e., HealtheNL viewer) |
| **Capture access to cancer patient information?** | Not specific to cancer patients only. Cancer patient information is available but cannot be separated from other non-cancer patient information at this time. |
| **Denominator** | Number of family physicians that have access to electronic health records, i.e., HealtheNL viewer. |
| **Numerator** | Number of family physicians who have logged into HealtheNL viewer at least 50 times per year |
| **Stratifications** | Regional health authority (Eastern, Central, Western, Labrador-Grenfell) |
| **Comments** | 1. This is a proxy indicator and does not measure access to electronic (EHR) cancer care information directly. Rather, it measures access to general EMRs, where cancer information is a subset. We will not be able to quantify how accurately it measures access to patient cancer information.  2. Multiple access to HealtheNL viewer per day is defined as one log in. Multiple access per day are typically due to healthcare providers being disconnected from HealtheNL viewer due to inactivity and then having to log in again throughout the day.  3. There are 1228 Medical Doctors using HealtheNL for which the specialty is unknown and 416 people accessing HealtheNL who we don’t know their role at all (e.g., RN, NP, Doctor, etc.).  4. Data includes all logins by family physicians to HEALTHe NL in the 2019 calendar year. 5. If a physician logged in to HEALTHe NL multiple times in one day, or from different sources, it was counted as one login overall.  6. HEALTHe NL is Newfoundland and Labrador’s Electronic Health Record (EHR) which facilitates sharing of patient data province wide across the continuum of care, across health care delivery organizations, and across geographical areas. The EHR links clinics, hospitals, community pharmacies and other points of care.  7. The Regional Health Authority (RHA) of the physicians is the RHA of their practice.  8. 55 physicians could not be allocated to an RHA. |