Chapter 21
Saskatchewan Cancer Agency—Delivering the Screening Program for Colorectal Cancer

1.0 Main Points

In Saskatchewan, colorectal cancer is the second leading cause of cancer death. Also, colorectal cancer cases in Saskatchewan are rising due to an aging population.

The Saskatchewan Cancer Agency is responsible for preventing and screening individuals for cancers, including colorectal cancer. Since 2009, the Agency provides a population-based Screening Program for Colorectal Cancer. The Agency collaborates with the Saskatchewan Health Authority to deliver the program. The Agency focuses its screening program on individuals between the ages of 50 and 74 because they are at higher risk of developing colorectal cancer.

At July 2020, the Agency had effective processes, other than in the following areas, to deliver its Screening Program for Colorectal Cancer. The Agency needs to:

- Work with the Saskatchewan Health Authority to reduce the time patients wait for colonoscopies and determine a reasonable timeframe for providing results from colonoscopies to patients.

  A consistent and provincial approach for booking colonoscopies is important as delays in patients receiving colonoscopies can result in delays in a colorectal cancer diagnosis. We found 22 individuals waited longer than 60 days for a colonoscopy and subsequently had a cancer diagnosis.

  Patients often find waiting for test results stressful. We found 12 individuals with a cancer diagnosis had to wait between 15 and 104 days for their colonoscopy results. Timely receipt of results assists in determining and providing appropriate and timely treatment.

- Analyze if its promotional strategies increase participation in its colorectal cancer screening program.

  Participation of individuals in the screening program has remained relatively unchanged since 2014. Periodically analyzing promotional strategies helps determine if the Agency is successfully focusing its efforts to educate the public and raise awareness of the screening program to increase screening participation.

- Use key performance indicators that are consistent with national good practice to measure the success of the screening program.

- Provide timely results and analysis of the screening program to senior management and the Board. This allows the Agency to take timely action to address areas that fall short of expectations.

Having an effective colorectal cancer screening program helps identify apparently healthy people who may have a higher risk of developing colorectal cancer. Approximately 90% of colorectal cancers can be prevented, or successfully treated if caught early.

2.0 INTRODUCTION

The Saskatchewan Cancer Agency is responsible for the planning, organization, delivery, and evaluation of cancer care services throughout Saskatchewan. It is also responsible for providing services with respect to prevention and screening of individuals for cancers, including colorectal cancer.[1]

The Agency launched a population-based Screening Program for Colorectal Cancer in 2009.[2] To help deliver the program, the Agency collaborates with the Saskatchewan Health Authority.

In 2019-20, the Agency spent almost $2.4 million on its Screening Program for Colorectal Cancer (2018-19: $2.7 million).[3] The Agency has assigned about 11 staff to the program (e.g., medical advisor, epidemiologists).

2.1 Incidence of Colorectal Cancer in Canada and Saskatchewan

Cancer is the leading cause of death in Canada.[4] Cancer poses an enormous burden on both the health of Canadians and on the Canadian healthcare system.

Colorectal cancer is expected to be the third most commonly diagnosed cancer in Canada in 2020.[5] About 26,900 Canadians are estimated to be diagnosed with colorectal cancer, and an estimated 9,700 Canadians will die from this cancer in 2020.[6]

Research (as shown in **Figure 1**) has identified four factors that increase the risk of colorectal cancer (age, diet, exercise, and smoking/alcohol use).

Figure 1—Risk Factors for Colorectal Cancer

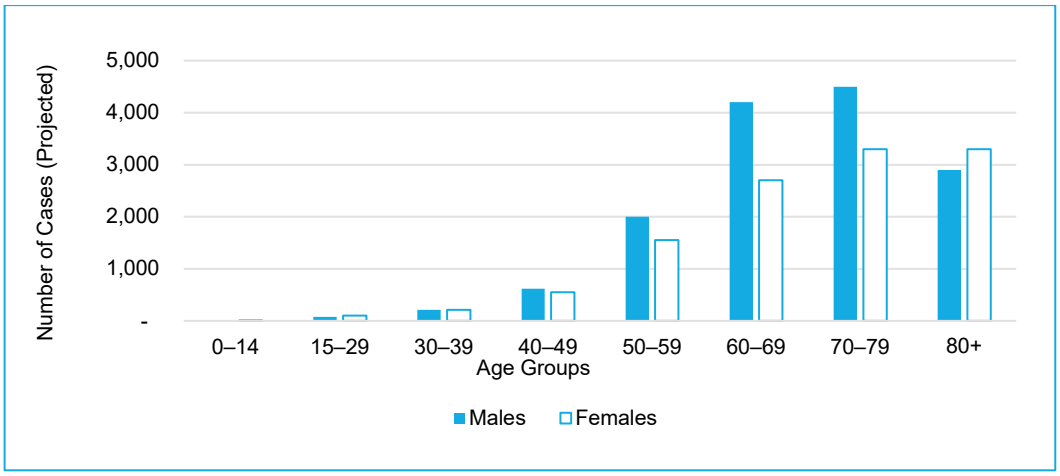
- Being 50 years of age or older
- A diet that is high in red meat consumption and low in fibre, fruits and vegetables
- Little or no exercise
- Smoking and/or alcohol use

Source:www.saskcancer.ca/images/pdfs/health_professionals/clinical_resources/cancer_screening_guidelines_and_resources/Physician_Portfolio.pdf (6 May 2020).

As **Figure 2** shows, most Canadians diagnosed with colorectal cancer are over the age of 50, with the risk increasing with age. In 2019, the highest number of projected cases in Canada were between 70 and 79 years of age, with 4,500 males and 3,300 females diagnosed with colorectal cancer.[7]

[1] *The Cancer Agency Act*, s.9(1) and (2).
[2] Population-based screening is where a test is offered to all individuals in a defined target group (e.g., of the same age range).
[3] Information provided by Saskatchewan Cancer Agency (7 May 2020).
[4] Canadian Cancer Society, *Canadian Cancer Statistics 2019*, (2019), p.6.
[5] www.cancer.ca/en/cancer-information/cancer-type/colorectal/statistics/?region=sk (6 May 2020).
[6] www.cancer.ca/en/cancer-information/cancer-type/colorectal/statistics/?region=sk (6 May 2020).
[7] Canadian Cancer Society, *Canadian Cancer Statistics 2019*, (2019), p.26. Cancer incidence data from 1984 to 2015 were used to project rates to 2019.

Figure 2—Projected Colorectal Cancer Cases in Canada, 2019



Source: Adapted from the Government of Canada's *Canadian Cancer Statistics 2019*, p.26.

In Saskatchewan, colorectal cancer is the second leading cause of cancer death.[8] It accounts for about 14% of new cancer cases in the province.[9] The number of new colorectal cancer cases in Saskatchewan is rising due to an aging population.[10]

Colorectal cancer screening can identify apparently healthy people who may have a higher risk of developing colorectal cancer, so they can be offered treatment or management techniques at an earlier stage, and to make a difference to their health outcome.

Research shows effective screening for colorectal cancer reduces mortality; approximately 90% of colorectal cancers can be prevented, or successfully treated if caught early.[11] Also, early identification of a colorectal tumor helps reduce costs of treatment.[12]

3.0 AUDIT CONCLUSION

The Saskatchewan Cancer Agency had, other than the following areas, effective processes to deliver its population-based Screening Program for Colorectal Cancer for the 12-month period ended July 31, 2020.

The Agency needs to:

- **Analyze if its promotional strategies help increase participation in the screening program**
- **Work with the Saskatchewan Health Authority to reduce the time patients wait for colonoscopies and determine a timeframe (benchmark) for providing diagnosis results to patients**

[8] www.saskcancer.ca/screening-article/why-is-screening-for-colorectal-cancer-important (6 May 2020).
[9] www.saskcancer.ca/images/pdfs/health_professionals/clinical_resources/cancer_screening_guidelines_and_resources/Physician_Portfolio.pdf (6 May 2020).
[10] www.saskcancer.ca/images/pdfs/health_professionals/clinical_resources/cancer_screening_guidelines_and_resources/Physician_Portfolio.pdf (6 May 2020).
[11] www.saskcancer.ca/screening-article/screening-program-for-colorectal-cancer (6 May 2020).
[12] US Department of Health and Human Services, Colorectal Cancer Screening, www.hrsa.gov/sites/default/files/quality/toolbox/508pdfs/colorectalcancerscreening.pdf (7 April 2020).

- **Align its key quality indicators with national indicators**
- **Provide timely results and analysis on the screening program to senior management and the Board**

Figure 3—Audit Objective, Criteria, and Approach

Audit Objective
The objective of this audit is to assess whether the Saskatchewan Cancer Agency had effective processes to deliver its population-based Screening Program for Colorectal Cancer for the 12-month period ending July 31, 2020.

Audit Criteria:

Processes to:

1. **Offer timely access to the Screening Program for Colorectal Cancer**
   - 1.1 Identify at-risk individuals for screening
   - 1.2 Make identified individuals aware of screening services available
   - 1.3 Have effective strategies to reach individuals for screening
2. **Provide the Screening Program for Colorectal Cancer**
   - 2.1 Set policies and procedures for the Screening Program that align with good practice
   - 2.2 Invite individuals for screening
   - 2.3 Confirm adequately trained personnel complete screening tests (e.g., process FIT kits, perform endoscopy)
3. **Monitor performance of the Screening Program for Colorectal Cancer**
   - 3.1 Periodically align program with good practice and national benchmarks
   - 3.2 Maintain quality assurance processes (e.g., monitor systems that send out invitations for screening, check quality of manual data entry, monitor quality of screening tests)
   - 3.3 Assess key colorectal cancer screening results against performance benchmarks
   - 3.4 Report key colorectal cancer screening performance information to senior management, the Board, and the public

Audit Approach:

To conduct this audit, we followed the standards for assurance engagements published in the CPA Canada Handbook—Assurance (CSAE 3001). To evaluate the Saskatchewan Cancer Agency's processes, we used the above criteria based on our related work, reviews of literature including reports of other auditors, and consultation with management. The Agency agreed with the above criteria.

We examined the Agency's policies, procedures, IT systems, reports, and other records relating to delivery of its population-based Screening Program for Colorectal Cancer. We interviewed key staff responsible for the screening program. We also tested samples of individuals invited for screening, completed Fecal Immunochemical Test (FIT) kits, and follow-ups on abnormal results. In addition, we conducted data analytics on the data in the Agency's screening IT system. Our primary source of good practice was the Canadian Partnership Against Cancer.[A]

[A]The Canadian Partnership Against Cancer is a non-profit organization that works collaboratively with provincial, territorial, and national partners to improve the effectiveness and efficiency of cancer control in Canada. It identifies best practice and sets national benchmarks for screening programs, including colorectal cancer screening programs.

4.0 KEY FINDINGS AND RECOMMENDATIONS

4.1 Individuals Identified As Eligible for Program

The Screening Program for Colorectal Cancer at the Saskatchewan Cancer Agency screens certain individuals, to identify those who are at risk or have developed colorectal cancer, consistent with good practice. It sets clear criteria about who is eligible to be invited to participate in the Agency's colorectal cancer screening program.

The Agency's colorectal cancer screening program, in common with other Canadian colorectal cancer screening programs, follows guidelines from the Canadian Partnership Against Cancer (CPAC) when determining potential screening program participants.[13]

Consistent with CPAC guidance, the Agency defines individuals eligible for the screening program as residents with a valid Saskatchewan Health Services card between the ages of 50 and 74 who have not been diagnosed with colorectal cancer in the last five years.[14,15] About one quarter of Saskatchewan's population (over 300,000 people) are between the ages of 50 and 74 (167,338 males and 165,966 females).[16]

Having a clear process to identify individuals to screen for colorectal cancer helps the Agency focus its screening program on individuals that can most benefit from participation in the screening program.

4.2 Clear Screening Policies and Procedures Established

The Saskatchewan Cancer Agency has clearly set out the key stages of its colorectal cancer screening program. It has up-to-date written policies and procedures for each key stage that are aligned with good practice.

Agency staff are members of the Canadian Partnership Against Cancer (CPAC). Staff responsible for the colorectal cancer screening program demonstrated their awareness of current national trends and practices related to colorectal cancer screening programs and colorectal cancer.

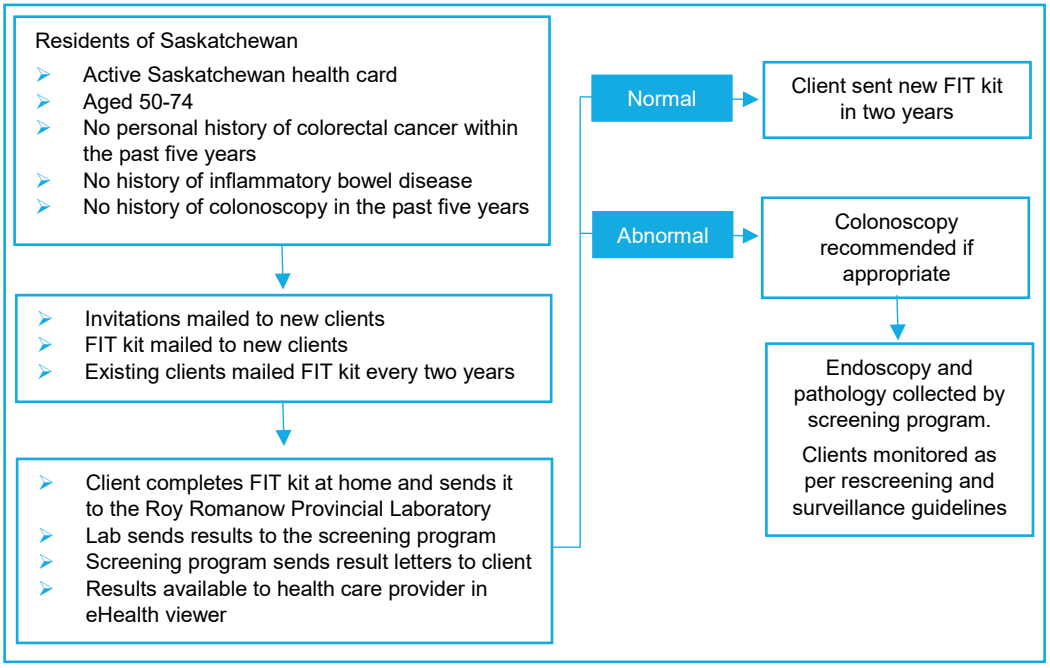
The Agency's colorectal cancer screening program is a voluntary program. As shown in **Figure 4,** the Agency had documented the key stages of the program. Key stages include:

- Identifying eligible individuals (potential clients)
- Inviting eligible individuals to participate in the program
- Mailing fecal immunochemical test (FIT) kits to potential and existing clients at prescribed intervals
- Coordinating testing of the FIT kits
- Communicating the test results

Where test results suggest the risk of colorectal cancer (i.e., abnormal result), the Agency or the Saskatchewan Health Authority coordinates the booking of a colonoscopy, and communicates the related results.

[13] The Canadian Partnership Against Cancer is a non-profit organization that works collaboratively with provincial, territorial, and national partners to improve the effectiveness and efficiency of cancer control in Canada.
[14] www.saskcancer.ca/screening-article/screening-program-for-colorectal-cancer (23 September 2020).
[15] The Agency screens individuals that are at average risk of developing colorectal cancer. Average risk means that a client is asymptomatic with no colorectal cancer in the past five years, no first degree family history of colorectal cancer or advanced adenoma diagnosed before age 60, and no inflammatory bowel disease (e.g., Crohn's or ulcerative colitis).
[16] Information provided by the Saskatchewan Cancer Agency.

Figure 4—Saskatchewan Cancer Agency's Client Pathway for the Screening Program for Colorectal Cancer



Source:www.saskcancer.ca/images/pdfs/health_professionals/clinical_resources/cancer_screening_guidelines_and_resources/Physician_Portfolio.pdf. (02 June 2020).

We found the Agency's screening program policies and procedures clear and understandable. In addition, they align with good practices in CPAC's colorectal cancer screening guidelines and guidance published by the Canadian Association of Gastroenterologists. For example, consistent with CPAC guidance, the Agency's program screens individuals within the target age range using a FIT kit every two years, unless a Saskatchewan resident informs the Agency, in writing, they do not want to partake in the screening program.[17]

In addition, the Agency has processes to periodically update its policies and procedures. We found it had updated all of the key policies and procedures for the colorectal cancer screening program within the past two years.

Having clear and documented key stages of the screening program along with clear written and up-to-date policies and procedures helps ensure staff responsible for the colorectal cancer screening program have a clear understanding of expected processes.

4.3 Promotional Strategies Not Increasing Participation Rates

While the Saskatchewan Cancer Agency has made efforts to target its promotional strategies to difficult-to-reach and under-screened areas of the province, it has not analyzed if its promotional strategies are raising awareness to help increase participation in the colorectal cancer screening program.[18] Our analysis found the participation of eligible individuals in this program has remained relatively unchanged since 2014.

[17] According to the Canadian Task Force on Preventative Health Care Guidelines.
[18] Participation rate shows the amount of individuals who completed a FIT kit out of the eligible target group (i.e., individuals between 50 and 74).

The Agency periodically analyzes data about participation in the program to help identify difficult-to-reach and under-screened populations and communities. For example, in 2017, the Agency's analysis of data, grouped by the former health regions, identified higher incident rates of colorectal cancer than expected for females in northern Saskatchewan and Weyburn and surrounding area, and for males in Prince Albert, Yorkton, and surrounding areas.[19]

In March 2020, the Agency's analysis of screening program participation rates by postal code identified various difficult-to-reach and under-screened areas across northern Saskatchewan and various communities in southern regions (e.g., Swift Current, Herbert, Moose Jaw, Balcarres).

The Agency uses various strategies to educate the public, public health care providers (e.g., primary care providers, physicians, nurse practitioners, nurses), and educators of health care providers (e.g., post-secondary institutions) about the risk of colorectal cancer and to promote its colorectal cancer screening program. For example, the Agency:

- Uses radio, television, and its website to promote its program primarily to the public throughout the year.
- Provides medical offices with brochures, screening program postcards, posters, fact sheets, and colorectal cancer screening program guidelines each year.
- Participates in health fairs and medical conferences attended by primary care providers and their educators, as well as other community engagement sessions. For the twelve-month period ended July 2020, the Agency attended 25 promotional events.[20]

To some extent, the Agency uses its analysis to help focus its promotional efforts. For example, the Agency, since 2016, has a Northern Health Bus initiative to promote awareness of its various cancer screening programs, including the colorectal cancer screening program. Its analysis has identified northern Saskatchewan as an under-screened area for colorectal cancer. In 2019, the Northern Health Bus held community engagement sessions (e.g., facilitated round table discussions about successes and gaps in the cancer care continuum) in 30 communities located in northern Saskatchewan.

We also noted the Agency periodically attends community events (e.g., town hall meetings) in areas with lower participation rates (e.g., Swift Current).

The Agency formally assesses the value of its participation in each promotional event. It requires agency coordinators who attend promotional events to complete a post-event evaluation form. The form records details about each promotional activity (e.g., number of participants), assesses the value of participating in the event (e.g., whether target audience was reached), and notes opportunities for improvement. It also notes if the Agency should attend the event again.

For each of the four events we tested, staff completed a post-event evaluation form as expected.

[19] In 2017-18, twelve health regions combined to form the Saskatchewan Health Authority.
[20] Due to the COVID-19 pandemic, no promotional events were attended from March 13, 2020 to July 31, 2020.

However, we found the Agency had not analyzed if its promotional strategies and participation in events raise awareness to help increase participation in its colorectal cancer screening program.

Our analysis found the participation rate in the Agency's colorectal cancer screening program has slowly decreased over the past six years to about 47% (see **Figure 5**). Also, the program participation rates falls short of Canada's national benchmark of 60% participation in colorectal cancer screening programs.[21,22]

Figure 5—FIT Kit Completion and Participation Rates in Saskatchewan[A]

	April 2014-March 2016	April 2015-March 2017	April 2016-March 2018	April 2017-March 2019	April 2018-March 2020[B]
Number of people (over 50 years of age) who have completed at least one FIT kit	154,831	160,711	158,007	159,367	152,727
Colorectal cancer screening program population-based participation rate	50.0%	51.1%	49.3%	49.3%	46.9%

Source: Saskatchewan Cancer Agency *Annual Report 2018-19*. April 2018 to March 2020 figures adapted from information provided by the Agency.
[A] The Agency reports participation rate and completed FIT kit statistics over a two-year period.
[B] The Agency paused its Screening Program for Colorectal Cancer effective March 18, 2020 due to the COVID-19 pandemic.

While the Northern Health Bus initiative started in 2016, we found the participation rates of northern Saskatchewan residents in the colorectal cancer screening program have decreased (see **Figure 6**).

Figure 6—Participation Rates of Northern Saskatchewan in the Screening Program for Colorectal Cancer

Former Health Region	April 2016-March 2018	April 2017-March 2019	April 2018-March 2020
Mamawetan Churchill River[A]	46.1%	31.7%	33.9%
Keewatin Yatthè[B]	37.1%	26.5%	28.1%
Athabasca[C]	38.0%	20.1%	22.3%

Source: Information provided by the Saskatchewan Cancer Agency.
[A] Mamawetan Churchill River Health Region included communities such as Creigton, La Ronge, Pinehouse, Sandy Bay, and Weyakwin.
[B] Keewatin Yatthè Health Region included communities such as Beauval, Green Lake, Buffalo Narrows, and La Loche.
[C] Athabasca Health Region included communities such as Stony Rapids and Uranium City.

Focusing promotional strategies on under-screened areas to raise awareness and educate eligible target groups should lead to increased program participation rates. Periodically assessing promotional strategies will help determine if they are effectively raising awareness and educating the target group to participate in the program. Higher program participation should lead to early detection and better health outcomes for individuals diagnosed with colorectal cancer.

1. **We recommend the Saskatchewan Cancer Agency analyze if its promotional strategies help increase participation in its Screening Program for Colorectal Cancer.**

[21] Canadian Partnership Against Cancer, *Cancer Screening in Canada*, (2015), p.9.
[22] Saskatchewan's participation rate was the highest in Canada as reported in the Canadian Partnership Against Cancer's *2017 Colorectal Cancer Screening in Canada* results report. Report data was from the period January 2013 – December 2014.

4.4 Processes to Identify Individuals Eligible for Program Well-Defined

The Agency has well-defined automated processes to identify individuals who meet its eligibility criteria for its colorectal cancer screening program and to share relevant key information about them.

The Agency has written agreements with eHealth Saskatchewan, the Ministry of Health, and the Saskatchewan Health Authority to enable sharing of relevant data about individuals who meet its colorectal cancer screening criteria (potential clients), and agree to participate in its program (clients). It uses an IT system for its colorectal cancer screening program to track key data about potential new clients and existing clients.

Each week, information from Saskatchewan's personal health registration system automatically updates the Agency's screening IT system for eligible individuals, and any changes to information (e.g., change in address) for existing clients.[23]

Up-to-date information allows the Agency to reach all potential new and existing clients to have them participate in the screening program.

4.5 Individuals Invited for Screening Consistent with Good Practice

The Saskatchewan Cancer Agency invites and sends FIT kits to individuals eligible for its colorectal cancer screening program (potential clients), and program participants (clients) consistent with intervals set out in good practice.

The Agency's screening IT system lists potential and existing clients for the colorectal cancer screening program. Every week, information from Saskatchewan's personal health registration system automatically updates the Agency's screening IT system for individuals who are now eligible for the colorectal cancer screening program.

The Agency's screening IT system automatically determines the next screening date of eligible individuals and existing clients based on the following:

- For potential clients who have not had a previous screening: the date the individual turned 50 years old, or if over 50 years of age and new to the province, the date the individual obtained a valid Saskatchewan Health Services card, and subsequently two years from that date
- For existing clients with normal results from the previous screening: two years from the date of the last screening
- For existing clients with abnormal results (e.g., requiring colonoscopy) from the previous screening: five years from the date of the colonoscopy
- For existing clients with abnormal results who decline colonoscopy: two years from the date of the last screening

[23] eHealth Saskatchewan, a provincial government agency, administers Saskatchewan's personal health registration system.

The screening IT system also tracks if opportunistic tests were done prior to an individual becoming eligible for the screening program, and adjusts the individual's next screen date appropriately (i.e., five years after colonoscopy or two years after FIT). [24]

We found each of the 30 individuals tested had the correct next screen date recorded in the screening IT system based on their completion of a FIT kit, the results, and if further screening was required.

Our data analysis of program participants found about 95% of individuals who had a colonoscopy had their next screen date set appropriately at 5.5 years after their colonoscopy date. For the remaining individuals, screening dates appropriately differed due to decisions made by primary care providers (e.g., ordering a colonoscopy or FIT sooner than five years from a previous colonoscopy).

Each week, the Agency creates an invitation campaign in its screening IT system. A weekly campaign contains the list of all individuals who are eligible to be mailed an invitation or a FIT kit. The campaign includes the steps set out in **Figure 7**.

Figure 7—Inviting Potential Clients to Participate in the Screening Program for Colorectal Cancer

- Send an invitation letter to each individual when they first become eligible.
- Mail FIT kit to new clients two weeks after invitation letter is sent. Once individuals complete a FIT kit, they can drop the sample off at a medical laboratory or mail it in (the Agency provides a prepaid mailing envelope).
- Where the Agency does not receive a completed FIT kit from a new client, the Agency mails two reminder letters–one after nine weeks and if no response one after 18 weeks.

The screening IT system tracks the dates of each of these steps. If no response after 18 weeks, the screening IT system automatically identifies the individual as not participating in the current campaign. The Agency will invite the individual again in two years.

Source: Adapted from information provided by the Saskatchewan Cancer Agency.

We found invitation letters, FIT kits, and reminder letters are sent to eligible individuals within reasonable timeframes. Our testing of 30 individuals (potential clients) who became eligible for the colorectal cancer screening program found:

- Only four of 30 individuals were not sent an invitation letter within one week of the individual turning 50 years of age (letters were sent between four and 32 days later than one week). The reasons for sending the invitations later than one week were appropriate given the circumstances (e.g., individual did not have a valid Saskatchewan Health Services number upon turning 50 years old).

- All 30 potential clients were sent FIT kits either within two weeks (29 individuals) or three weeks of the screening program invitation letter (1 individual).

- All 25 individuals who did not complete a FIT kit were sent the nine-week reminder letter to complete the FIT kit as expected.

- Only six of the 23 individuals who required a second reminder were not sent the 18-week reminder letter as expected. We found this was a result of the COVID-19 pandemic which suspended program activities from March 17, 2020 to May 12, 2020.[25]

[24] Opportunistic screening is when individuals receive screening for colorectal cancer at the request of their physician.
[25] Effective March 18, 2020, the Screening Program for Colorectal Cancer suspended mailing FIT kits and reminders letters to individuals until precautionary measures around the COVID-19 pandemic were lifted.

Our data analysis further showed the Agency mailed FIT kits to potential clients within a reasonable timeframe. We found 96% of individuals who became eligible between August 1, 2019 and March 31, 2020 had a FIT kit mailed within three weeks of turning 50 years old and becoming eligible for screening.[26,27] The reasons for the remaining 4% who did not receive FIT kits within three weeks of becoming 50 years of age were appropriate (e.g., received an opportunistic screening prior to turning 50 years of age, or were ineligible because they did not have a valid Saskatchewan Health Services number when they turned 50 years of age).

Providing timely invitations (i.e., letters) and FIT kits to potential new and existing clients, and providing reminders if required, helps increase the likelihood of individuals participating in the screening program. This, in turn, increases the opportunity to detect colorectal cancer, if any, in its early stages.

Individuals can choose to opt-out of the program. Agency staff update the screening IT system to indicate which individuals choose not to partake in the screening program. The Agency does not send further communications to these individuals. Less than 1% of eligible individuals chose to opt out of the screening program from August 1, 2019 to March 31, 2020.

4.6 Screening Tests Analyzed by Qualified Staff

The Saskatchewan Cancer Agency is aware of the processes the Saskatchewan Health Authority uses to verify qualified staff analyze completed FIT kits (screening test).

As set out in **Figure 4**, completed FIT kits are sent to the Roy Romanow Provincial Laboratory. The Saskatchewan Health Authority operates the Provincial Lab. The Provincial Lab analyzes and tests the FIT kit samples. The Authority participates in the Diagnostic Quality Assurance Program at the College of Physicians and Surgeons of Saskatchewan. This Program confirms the Provincial Lab meets all the applicable standards established by the Laboratory Quality Assurance Program.[28] For example, it confirms:

- Qualification of staff (e.g., individuals are Medical Laboratory Technologists and licensed with the Saskatchewan Society of Medical Laboratory Technologists)
- Quality of the Provincial Lab's testing processes (e.g., methods for collection, identification, transportation, and assessment of condition of specimens)
- Adequacy of training

We found the Agency is aware the Provincial Lab is licensed and fully accredited.[29] Agency staff knew the accreditation remains valid until the next accreditation, and the accreditation usually takes place every three years.

[26] We expected the Agency to send invitation letters to individuals within one week of becoming eligible and then have the FIT kit sent two weeks after as required.
[27] The Agency suspended the screening program in March 2020, therefore data provided for the audit was from August 1 2019 to March 31, 2020.
[28] The Laboratory Quality Assurance Program requires medical laboratories in Saskatchewan to be compliant with the *Medical Laboratory Licensing Act* and Regulations.
[29] The Provincial Lab was accredited in December 2018.

Knowing qualified staff analyze and test FIT samples helps the Agency deliver a reputable screening program. In addition, it helps ensure patients (and their primary care providers) receive reliable test results.

4.7 FIT Kit Results Delivered Timely

The Saskatchewan Cancer Agency uses an automated process to receive results of fecal immunochemical test (FIT) kits from the Roy Romanow Provincial Laboratory. It has well-established processes to provide FIT kit screening results to clients and primary care providers promptly after receiving results from the Provincial Lab.

Although the Agency and the Saskatchewan Health Authority have not determined a target turnaround time for the Provincial Lab to process completed FIT kits, the Agency has found the Provincial Lab processes FIT kits within a reasonable period.

Our data analysis confirmed the Provincial Lab processes FIT kits within a reasonable period. Our analysis found the Provincial Lab tested all FIT kits it received between August 1, 2019 and March 31, 2020 within five days of its receipt of them. During this period, the Provincial Lab received 21,431 FIT kits. Our analysis further found the Provincial Lab took, on average, two days to test FIT kits received between August 1, 2019 and March 31, 2020.

The Agency has well-defined process to both receive FIT kit results from the Provincial Lab, and to send clients the results of the tests.

Each day, the Agency electronically receives FIT kit results from the Provincial Lab, which automatically updates its screening IT system. Upon receipt, it checks the accuracy of the data (e.g., missing specimen collection date) before it mails written results (i.e., letter with test results) to clients and primary care providers. The Agency is aware from time to time the screening IT system misses generating test result letters. Therefore, each week, the Agency runs a report to identify clients with FIT kit results in its screening IT system who were not informed of the results (missing letters). It then sends these clients their test results.

Our testing of 30 clients who submitted a FIT kit found:

- The Provincial Lab tested all 30 FIT kits within four days of its receipt of them, taking two days on average.
- The Agency sent 28 of 30 individuals FIT kit results within three days of the Provincial Lab producing a FIT kit result, taking less than two days on average. For the remaining two, the Agency had identified it missed sending them test results and sent the results 9 days and 11 days, respectively, after its receipt of FIT kit results.

Clients often find waiting for test results stressful. Communicating FIT kit results promptly reduces stress. In addition, where FIT kit results indicate a risk of colorectal cancer (abnormal), it allows clients and primary care providers to take action sooner (i.e., schedule a colonoscopy).

4.8 Consistent Approach for Booking Colonoscopies Needed

Under its screening program, the Saskatchewan Cancer Agency and the Saskatchewan Health Authority do not have a consistent approach for booking endoscopic services (i.e., colonoscopies) for patients with an identified risk of colorectal cancer. This is resulting in patients not having colonoscopies booked within the 60-day national benchmark 90% of the time.

The Canadian Partnership Against Cancer has set a benchmark of booking 90% follow-up colonoscopies within 60 days of a patient's receipt of an abnormal screening result from a FIT kit. A follow-up colonoscopy is part of further screening to help determine the presence of colorectal cancer. Only endoscopists (specialist physicians) perform colonoscopies. At March 2020, Saskatchewan had 69 endoscopists located throughout the province that perform colonoscopies for the colorectal cancer screening program.

Either the Agency or the client's primary care provider are responsible for booking follow-up colonoscopies. The Agency is responsible to book colonoscopies in certain regions of the province—it calls these regions program-navigated and dual-navigated.[30] The areas where the Agency does not book the follow-up colonoscopies are called non-navigated regions and the responsibility for referring clients for colonoscopy lies solely with the client's primary care provider.

In program navigated regions, booking the appointment for the follow-up colonoscopy is the responsibility of the Agency where a client's abnormal result was from a FIT kit completed as part of its screening program. In dual navigated regions, booking the appointment for the follow-up colonoscopy is the responsibility of the Agency where a patient's abnormal result was from a FIT kit completed as part of its screening program or as ordered by a client's primary care provider as part of opportunistic screening.

From August 1, 2019 to March 31, 2020, 3,137 patients had an abnormal result from a completed FIT kit. Of these, our data analysis found the following:

- On an overall basis, 79% had follow-up colonoscopy appointments booked within 60 days of an abnormal FIT result, falling short of the national target of 90%.
- For patients in navigated regions (i.e., where the Agency is responsible for booking), the average wait time from abnormal FIT result to colonoscopy appointment was less than 60 days.
- For patients in non-navigated regions, the average wait time from abnormal result to colonoscopy appointment was over 60 days, ranging from 66 to 95 days.

[30] Over 65% of Saskatchewan's population is in Agency navigated regions.

In our testing of 30 individuals with an abnormal FIT result (including patients from navigated, dual-navigated, and non-navigated regions), 25 of 30 patients required a colonoscopy.[31] For these 25 patients, we found 11 of the 25 colonoscopies were not booked within 60 days. Of these 11:

- Four patients were part of the Agency's screening program. In one case, the Agency did not book one colonoscopy because it could not reach the individual with the abnormal test result after numerous attempts. In three cases, the Agency booked the colonoscopy late due to the Authority's pause on providing non-urgent medical procedures because of the COVID-19 pandemic. Once advised by the Authority that it was resuming non-urgent medical procedures, we found the Agency booked these appointments.

- Seven colonoscopies were not part of the Agency's screening program (that is, the client's primary care provider was responsible for booking the appointment), and lateness ranged from six to over 119 days (one colonoscopy was not booked at time of our testing).

For the 21 individuals we tested with a completed colonoscopy, the colonoscopy report information (from physicians) was accurately entered into the screening IT system.

We also analyzed data on wait times for colonoscopies for those individuals who were diagnosed with colorectal cancer. From August 1, 2019 to March 31, 2020, our data analysis found 22 individuals who waited longer than 60 days for a colonoscopy which diagnosed cancer (wait times ranged from 61 to 159 days after an abnormal FIT result).

The Agency is publicly accountable for national metrics such as the wait time from an abnormal FIT result to a colonoscopy. Both the Agency and the Authority recognize many patients do not receive endoscopy services within the 60-day national benchmark and many wait too long.

Management indicated, beginning September 2020, the Agency and the Authority started a project with a goal to improve endoscopy wait times by establishing yearly goals and targets.

Without a consistent and provincial approach for booking colonoscopies, patients who are not navigated through the Agency's screening program often wait longer for colonoscopies. Delays in receiving colonoscopies can result in delays in a colorectal cancer diagnosis. Research shows 90% of colorectal cancer can be prevented or successfully treated if caught early.

2. We recommend the Saskatchewan Cancer Agency work with the Saskatchewan Health Authority to reduce the time patients wait for colonoscopies with an aim to provide these services within the nationally accepted benchmark for colorectal cancer screening programs.

[31] In our sample, two individuals declined colonoscopy and three physicians recommended no colonoscopy.

4.9 Endoscopic Services Actively Monitored

The Saskatchewan Cancer Agency actively monitors the quality of endoscopic services endoscopists provide for the colorectal cancer screening program.

Each year, the Agency analyzes and reports on the quality of services each endoscopist practicing in Saskatchewan provides. It compares various aspects of the services of each endoscopist to provincial statistics (e.g., adenoma detection rate, bowel preparation, cecal intubation rate, and withdrawal times).[32,33] It summarizes the results of its analysis of each endoscopist in separate endoscopy quality reports. The Agency gives the report to the endoscopist, the Agency's medical advisor, and the Authority's Deputy Chief Medical Officer.

For five endoscopists we tested who completed colonoscopies for the screening program, we found the Agency has completed an annual endoscopy quality report for each.

Also since 2017, the Agency, in conjunction with the Saskatchewan Health Authority, has piloted the Direct Observation of Procedural Skills program. Endoscopists practicing in Saskatchewan can volunteer to participate in the program. Under the program, independent contractors with assessor training observe an endoscopist during a live procedure. The assessor evaluates the skills of the endoscopist against good practice, provides feedback, and identifies areas to improve performance. The Agency tracks results for each endoscopist observed through the program.

From its inception to March 31, 2020, the program has assessed 59 of the 69 endoscopists practicing in Saskatchewan that perform colonoscopies for the colorectal cancer screening.[34] Management indicated the Agency, in coordination with the Authority, has not determined how often it will assess endoscopists who volunteer to participate in the program.

Actively monitoring the work of endoscopists helps the Agency determine whether clients of the colorectal screening program and other patients receive quality endoscopic services.

4.10 Benchmark for Giving Patients Timely Pathology Results Needed

The Saskatchewan Cancer Agency and the Saskatchewan Health Authority have not set a benchmark for providing pathology results from colonoscopies to patients (including clients of the colorectal cancer screening program) and primary care providers within a target timeframe. The Agency does not routinely analyze how long its clients wait to receive pathology results.

[32] Adenoma detection rate is the rate at which an endoscopist finds one or more precancerous polyps during a screening colonoscopy procedure.
[33] Bowel preparation assesses whether an endoscopist adequately cleaned out the bowel before colonoscopy—a clear bowel improves the quality of a colonoscopy. Cecal intubation assesses whether an endoscopist reached the cecum or not during colonoscopy—reaching the cecum improves quality of a colonoscopy. Withdrawal time measures the length of time it takes an endoscopist to withdraw a specimen from the bowel during colonoscopy—withdrawal time should be six to 10 minutes.
[34] Saskatchewan Cancer Agency, *Annual Report 2019-20*, p. 10.

Subsequent to colonoscopies, the Authority is responsible for providing pathology results (e.g., cancer diagnosis) to patients and primary care providers. The Authority also provides this information to the Agency to track within its screening IT system.

Although European good practice is to have a diagnosis within 14 days after a colonoscopy, the Canadian Partnership Against Cancer has not yet set a benchmark for the time to diagnose after a colonoscopy.[35]

Our data analysis found from August 1, 2019 to March 31, 2020, 2,650 individuals had colonoscopies. Of these, 95% had pathology results provided within 14 days of colonoscopy. Twelve individuals with a colorectal cancer diagnosis had to wait longer than 14 days for the pathology results (ranged from 15 to 104 days after the colonoscopy). One individual, in a non-navigated region, waited 125 days for a colonoscopy and a further 59 days for pathology results. This individual was diagnosed with cancer.

In our testing of 25 colonoscopies, 16 patients were diagnosed with cancer. We found 14 of these patients had a diagnosis within 14 days after colonoscopy. In the two instances where pathology results exceeded 14 days, pathology results were provided 25 and 37 days after the colonoscopy.

Having benchmarks for expected timeframes to give pathology results from colonoscopies to patients and primary care providers would help the Agency and the Authority assess wait times. Timely receipt of pathology results assists in determining and providing appropriate and timely treatment, and reduces the risk of the abnormality growing or spreading to other parts of the body.

3. **We recommend the Saskatchewan Cancer Agency work with the Saskatchewan Health Authority to determine a timeframe (benchmark) for providing patients and healthcare providers with pathology results related to screening for colorectal cancer.**

4.11 Analysis of Screening Program Results and Timely Reporting Needed

The Saskatchewan Cancer Agency's reporting on key indicators does not contain analysis or explain where it has not met national benchmarks. In addition, the Agency provides senior management and the Board with key program information later than good practice expects.

The Agency tracks data on the six indicators it uses to regularly assess its colorectal cancer screening program (key indicators).

Each quarter, the Agency reports to senior management and the Board on five of its six key quality indicators (outlined in **Figure 8**). For each indicator reported in the quarterly report, the Agency compares the results for the quarter to its prior year results and related national benchmark, if available.

[35] International Agency for Research on Cancer. *European guidelines for quality assurance in colorectal cancer screening and diagnosis*: 1st ed. Lyon (FR): The Agency; 2010.

Figure 8—Six Quality Indicators Used by the Agency's Screening Program for Colorectal Cancer

Indicator[A]	Definition	National Benchmark	Actual Results at March 31, 2020
Participation rate (population based)	Proportion of the target population who successfully completed at least one FIT in the program within two years	60% or higher	46.9%
Retention rate	Proportion of individuals aged 50-74 re-screened within 24 or 30 months after a normal FIT in two years	Not set	[B]
Positivity rate	Proportion of individuals with an abnormal FIT result	Not set	7.0%
Follow up on colonoscopy uptake	Proportion of individuals with an abnormal FIT result having a follow-up colonoscopy within six months	85% or higher	80.6%
Wait times to follow up colonoscopy	Time interval from abnormal FIT to follow up colonoscopy	90% or higher within 60 days of an abnormal FIT result	114 days on average
Program invasive colorectal cancer detection rate	Rate per 1000 individuals with colorectal cancer confirmed by pathology from a follow-up colonoscopy performed within 180 days of an abnormal screening over two years	2 or more colorectal cancer cases per 1000 people screened	3.6 cases

Source: Adapted from information provided by the Saskatchewan Cancer Agency.
[A] The Agency incudes four indicators in its quarterly reports to senior management and the Board (highlighted blue).
[B] Retention rate at June 30, 2019 was 77.4% as reported in June 2020.

In June 2020, the Agency began reporting on the sixth indicator (i.e., retention rate) and management intends to report on this measure annually going forward.

The Agency also periodically gives senior management reports on four additional indicators (i.e., invasive colorectal cancer stage distribution, colonoscopy withdraw time, bowel preparation, cecal intubation rate). It enables management to evaluate the quality of colonoscopies and endoscopic services.

Good practice suggests reporting results on key indicators three to six months after the results period.

The Agency reports on two of six key indicators (i.e., participation rate, positivity rate) within timeframes consistent with good practice, however, it does not for the four other key indicators. For example, it reported:

- Retention rate information six months later than good practice suggests—information related to June 2019 period end was reported in June 2020 instead of in December 2019
- Colonoscopy information three months later than good practice suggests—information related to September 2019 was reported in June 2020 instead of March 2020

We also found the Agency's quarterly reporting to senior management and the Board does not include trends (e.g., comparisons to multiple previous periods) or analysis of trends. In addition, it does not include reasons why the program has not achieved national benchmarks, or management's actions or plans to improve program performance.

At March 2020, as shown in **Figure 8**, for three of its indicators with national performance benchmarks, the Agency's colorectal cancer screening program did not achieve the national benchmark as indicated below:

- The participation rate (population-based) was 46.9% as compared to the national benchmark of 60% or higher.[36]
- The follow-up on colonoscopy uptake was 80.6% as compared to the national benchmark of 85% or higher.
- The wait time to follow-up colonoscopy was 114 days on average compared to the national benchmark of 90% or higher within 60 days of an abnormal FIT result.[37]

Periodically providing trends in results for key performance indicators and written detailed analysis would help the Agency understand its progress and identify opportunities for improvements. Providing timely performance information increases the ability of senior management and the Board to identify potential improvements sooner.

4. **We recommend the Saskatchewan Cancer Agency periodically include analysis of key quality indicator results for its Screening Program for Colorectal Cancer in its reports to senior management and the Board.**

5. **We recommend the Saskatchewan Cancer Agency report on results of key quality indicators timely for its Screening Program for Colorectal Cancer.**

In addition, we identified concerns with the accuracy of data the Agency uses to measure one of its quality indicators—the participation rate (population-based). We found the Agency did not calculate the population-based participation rate consistent with the calculation method set by the Canadian Partnership Against Cancer. In calculating this rate, the Agency considers any individual invited and screened within 24 months; whereas, the national calculation method considers any individual invited within a 24-month period and screened within 30 months. We determined the difference in calculation method results in the Agency's rate being slightly lower than if it used the national calculation method.

We suggest the Agency confirm it uses the calculation method set by the Canadian Partnership Against Cancer to calculate indicators compared to national benchmarks.

4.12 Consistency With National Indicators Needed

The Saskatchewan Cancer Agency has not considered whether to update its six key indicators to make them all consistent with the revised set of national indicators. Only four of the Agency's six key indicators are consistent with the 10 national indicators in place since October 2019.

[36] Saskatchewan's participation rate was the highest in Canada as reported in the Canadian Partnership Against Cancer's *2017 Colorectal Cancer Screening in Canada* results report. Report data was from the period January 2013 to December 2014.
[37] Wait time to follow-up colonoscopy was 84 days on average in navigated regions, 113 days on average in dual-navigated regions and 154 days on average in non-navigated regions.

The Agency is a member of the Canadian Partnership Against Cancer (CPAC). As a member of CPAC, the Agency tracks and reports annually to CPAC on the national performance indicators for colorectal cancer screening programs.

The Agency's six key indicators, used for quarterly reporting, are a subset of 16 quality indicators for colorectal cancer screening programs that CPAC had in place prior to October 2019. In October 2019, CPAC released a revised set of 10 national performance indicators for colorectal cancer screening programs; half of which are the same or similar to the previous list of 16.

In October 2019, the Agency completed a feasibility scan and concluded it has information available to report on nine of the 10 revised indicators. It includes four of them (highlighted blue in **Figure 8**) in its quarterly reports to senior management and the board.

At July 2020, nine months since CPAC released the 10 revised indicators, we found the Agency has not identified nor regularly use revised national quality indicators key to monitor the effectiveness of the Authority lab staff and contracted endoscopists (like interval cancer rates), and the extent of participation of eligible individuals in its program (like screening program participation rates).[38]

Up to 2019, the Agency annually reported to CPAC on all 16 quality indicators. The Agency expects CPAC will ask it to report on the revised 10 national performance indicators in 2021.

Without having key performance indicators consistent with national good practice, the Agency risks using outdated and inappropriate measures to keep its senior management and Board informed about its colorectal cancer screening program throughout the year. Timely analysis and reporting of relevant quality indicators provides pertinent information for decision-making.

6. **We recommend the Saskatchewan Cancer Agency align quality indicators it regularly uses to report on the Screening Program for Colorectal Cancer with nationally accepted indicators.**

Also, we found information in the Agency's screening IT system about the number of FIT kits sent may be slightly overstated. Our testing of individuals eligible for the program identified one instance where the information about the FIT kits sent in the Agency's screening IT system was not accurate. In this instance, the screening IT system incorrectly indicated a FIT kit as sent even though the Agency appropriately did not send one. Management told us this individual did not qualify for a FIT kit because the individual had a colonoscopy less than five years prior (through opportunistic screening).

Management noted, from time-to-time, they do not send FIT kits. In these cases, the Agency does not correct information in the screening IT system because correcting the information would negatively impact the next screening date. The Agency would use the number of FIT kits sent to determine the screening program's participation rate.

[38] The interval cancer rate measures the effectiveness of screening in identifying cancer via FIT kits and via colonoscopy.

We suggest the Agency assess the accuracy of its data in its screening IT system used for calculating the colorectal cancer screening participation rate. Management indicated it resolved this issue in October 2020.

4.13 Temporary Screening Program Suspension Handled Appropriately

The Saskatchewan Cancer Agency handled the temporary suspension of its colorectal cancer screening program in a way that minimized, to the extent possible, the impact of the disruption of services on its potential and existing clients.

The Agency temporarily suspended the Screening Program for Colorectal Cancer between March 17, 2020 and May 12, 2020. Its suspension coincided with the Saskatchewan Health Authority's decision to suspend non-urgent procedures because of potential health and safety risks resulting from the COVID-19 pandemic.

We found the Agency's senior leadership clearly communicated to staff about the Program's temporary pause, explaining why. During this period, it appropriately did not invite individuals who became eligible for screening because appropriate follow-up (i.e., testing of FIT kits and colonoscopies) was not possible. It properly determined testing of FIT kits was not urgent.

We also found the Agency had a reasonable resumption plan to re-open the screening program in June 2020 once the Authority resumed providing non-urgent procedures. It identified all individuals eligible for screening since March 17, 2020. It then sent letters and FIT kits in smaller groupings to avoid overwhelming the Provincial Lab and health care system with testing. Where the Agency had mailed FIT kits to individuals prior to March 17, 2020, it sent reminder letters (approximately 10,500). Furthermore, Agency staff re-booked colonoscopy appointments for clients with cancelled appointments. It used a risk-based approach (based on the original date of booking and the clients' urgency and medical history) to determine which clients to schedule earlier.

Having a risk-based plan to resume services after the temporary disruption helped the Agency minimize the impact on its potential and existing clients.

5.0 Selected References

Auditor General Ontario. (2012). *2012 Annual Report* – Chapter 3, *Section 3.01, Cancer Care Ontario—Cancer Screening Programs in Cancer Care Ontario*. Toronto: Author.

Provincial Auditor of Saskatchewan. (2016). *2016 Report – Volume 2*, Chapter 14, *Saskatchewan Cancer Agency—Delivering the Screening Program for Breast Cancer.* Regina: Author.

The Auditor General of Australia. (2017). *Procurement of the National Cancer Screening Register.* Canberra: Author.

The Comptroller and Auditor General of UK. (2019). *Investigation into the Management of Health Screening at the Department of Health and Social Care.* United Kingdom: Author.