CANADIAN **PARTNERSHIP** AGAINST **CANCER**

PARTENARIAT CANADIEN CONTRE LE **CANCER**

Breast Cancer Screening in Canada:

ENVIRONMENTAL SCAN

Data collected in 2018

Revised March 2019

Acknowledgements

Production of this environmental scan has been made possible through financial support from Health Canada through the Canadian Partnership Against Cancer.

The Canadian Partnership Against Cancer would like to gratefully acknowledge the provinces and territories for their contribution of data extraction and submission.

Suggested citation: Canadian Partnership Against Cancer. Breast Cancer Screening in Canada: Environmental Scan. Toronto, ON: Canadian Partnership Against Cancer; 2018.

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Executive Summary

Organized breast cancer screening programs are available in most provinces and territories across Canada (Table 1). The programs screen women who are asymptomatic (no signs or symptoms of breast cancer present). Where organized screening programs are not available, screening services may be accessed opportunistically through a primary care provider (PCP).

Most provinces and territories recommend screening asymptomatic women at average risk for breast cancer with a mammogram every two years starting at age 50 until age 74 or 75. Some jurisdictions accept women under the age of 50 to screen for breast cancer, every one or two years, if: a woman chooses to get screened, has been identified as high risk, or has a physician recommendation (Table 2).

Participants are recruited into provincial and territorial breast screening programs using a variety of strategies. In most jurisdictions, participants can be referred to breast cancer screening programs through physician and self-referral. In addition, letters of invitation are used as a recruitment strategy in six provinces (Table 3).

Mammography is commonly used as an entry level screening test for breast cancer (Table 4). Other modalities used in Canada to screen women for breast cancer are tomosynthesis, magnetic resonance imaging (MRI), and ultrasound (Table 5). The use of modalities other than mammography may be dependent on a women's risk level.

All provinces and territories, with the exception of Nunavut, send out recall letters or a postcard to women after they obtain a normal mammography result (Table 6). In the case of an abnormal result, programs send recall letters to both primary care providers and participants. Some jurisdictions also follow-up with participants over the phone to inform them of their results and to schedule a follow-up appointment (Table 8).

Six provinces and one territory have implemented a variety of strategies to connect with First Nations, Inuit and Métis. Strategies identified addressed engaging with First Nations, Inuit and Métis in decision-making and informing approaches to culturally appropriate screening, reaching First Nations, Inuit and Métis through program resources, and engaging with healthcare providers working directly with First Nations, Inuit and Métis communities (Table 14). Strategies have also been implemented to help address participation in underserved populations. These strategies focus primarily on individuals in rural communities, new immigrants and low-income individuals (Table 15).

Background

The Canadian Partnership Against Cancer collects information annually on national, provincial and territorial breast cancer screening guidelines, strategies and activities.

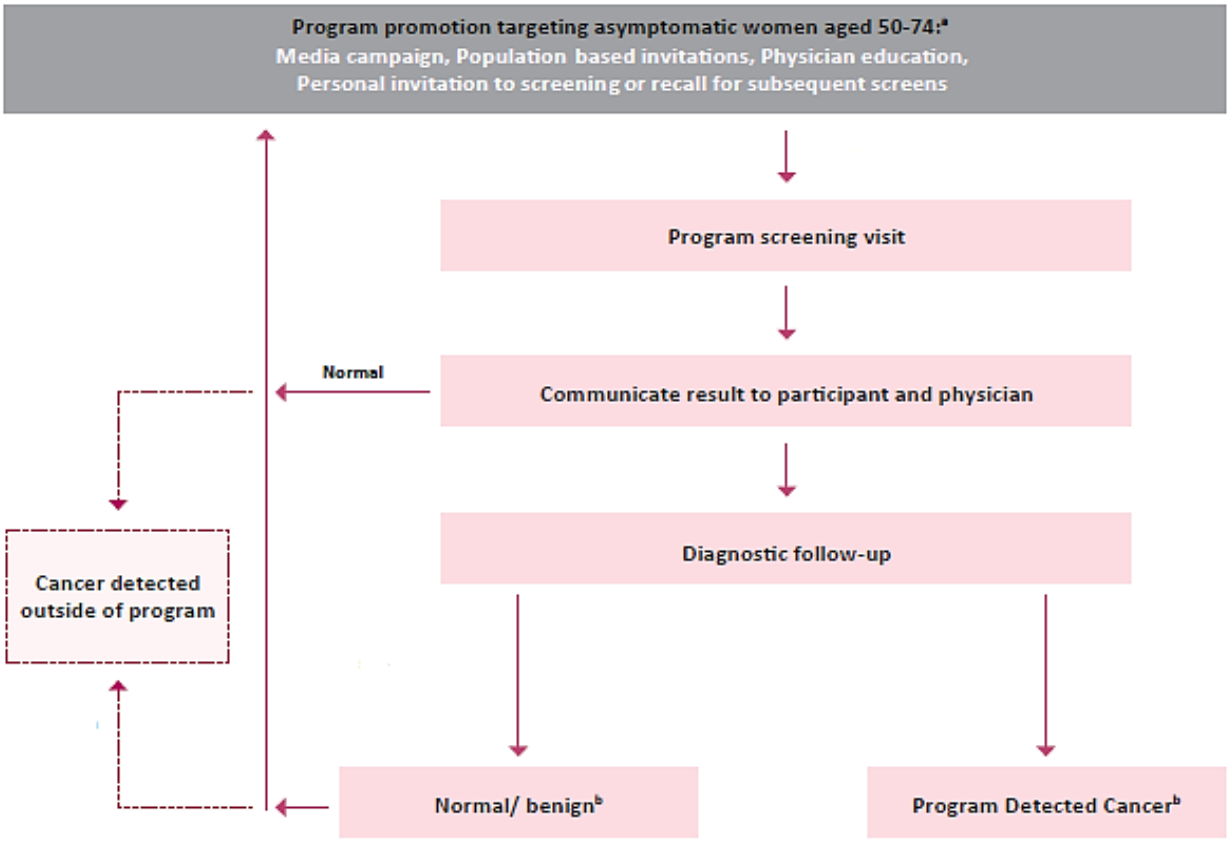
This environmental scan summarizes the data collected from provincial and territorial screening programs and is intended to provide information to inform provincial/territorial decision-making for policy and practice.

The information for this environmental scan was collected in June and July 2018. All provinces and territories responded to the environmental scan.

Breast Cancer Screening Programs and Guidelines

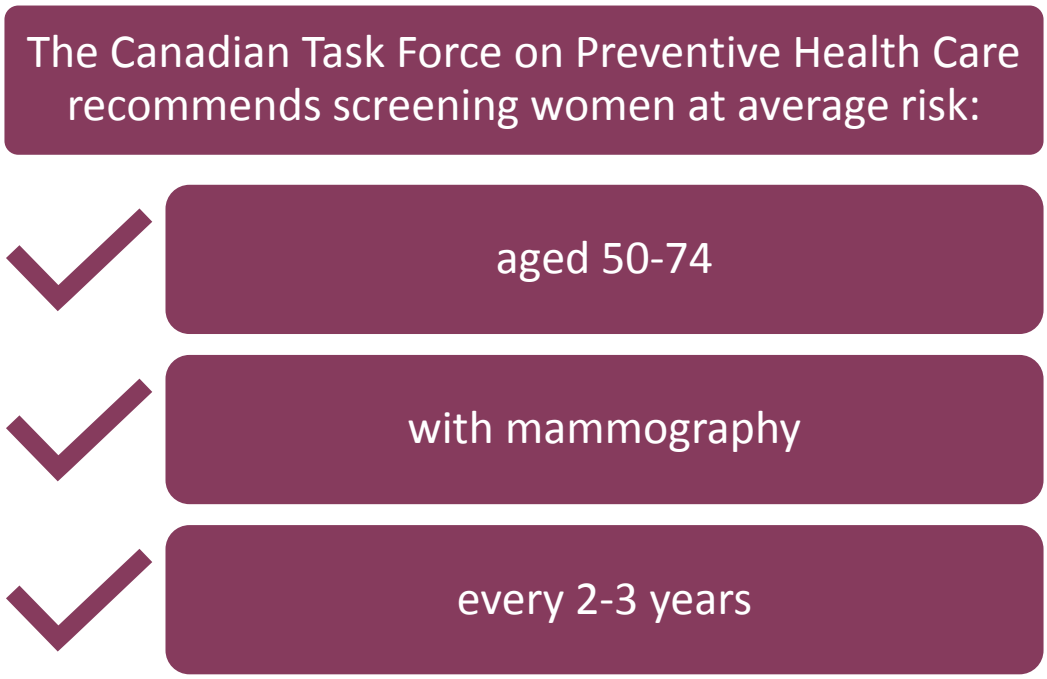
Breast Cancer Screening Pathway

Figure 1: Breast Cancer Screening Pathway[1]



Canadian Task Force on Preventive Health Care Guidelines (2011)

The Canadian Task Force on Preventive Health Care (CTFPHC) develops clinical practice guidelines that support primary care providers in delivering preventive health care.[2] In addition to supporting primary care providers, the CTFPHC's guidelines are also relevant to community and public health professionals, physician specialists, other health care and allied health professionals, program developers, policy makers, and the Canadian public.



Average risk is defined as:

- No personal history of breast cancer
- No history of breast cancer in a first-degree relative
- No known mutations in BRCA1/2 genes
- No previous exposure of chest wall to radiation

Additional breast cancer screening recommendations by CTFPHC include:

- Mammography – mammography screening for women aged 40-49 is not recommended for routine screening for breast cancer
- Magnetic Resonance Imaging (MRI) – magnetic resonance imaging is not recommended for routine screening for breast cancer

- Clinical Breast Exam – clinical breast exam alone or in conjunction with mammography in not recommended for routine screening for breast cancer
- Breast Self Exam – breast self exam is not recommended for routine screening for breast cancer

Breast Cancer Screening Programs in Canada

Organized breast cancer screening programs are available in most provinces and territories across Canada. The programs screen women who are asymptomatic (no signs or symptoms of breast cancer present) and at average risk for breast cancer. Where organized screening programs are not available, screening services may be accessed opportunistically through a primary care provider (PCP).

The first organized breast cancer screening program began in British Columbia in 1988. Between 1990 and 2008, 11 more Canadian jurisdictions implemented organized breast cancer screening programs. Nunavut does not have an organized breast cancer screening program at this time.

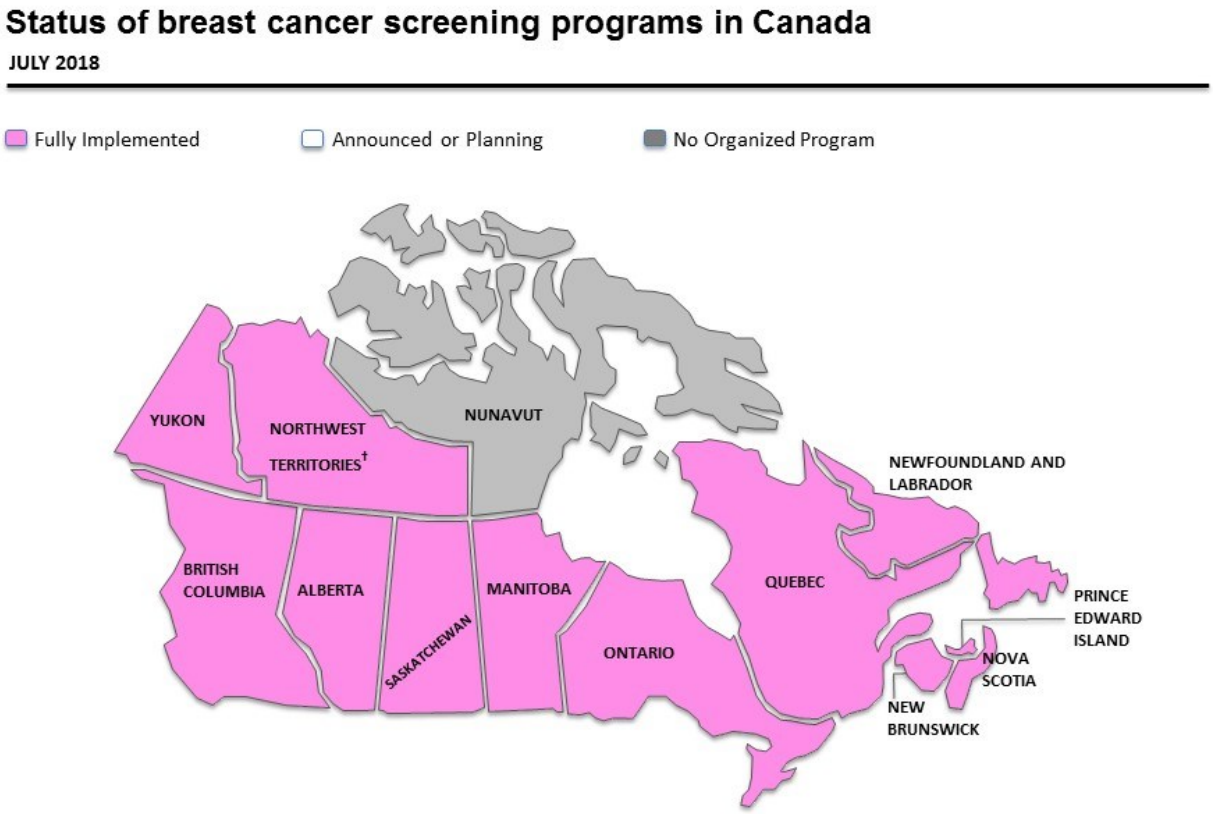
Table 1: Breast Cancer Screening Programs in Canada

	Program start date	Program name	Agency responsible for program administration
Nunavut (NU)	No organized screening program available[t]		
Northwest Territories (NWT)	2004	Yellowknife Breast Screening Program (YKBSP)	Northwest Territories Health and Social Services Authority (NTHSSA)
	2008	Hay River Breast Screening Program (HRBSP)	Hay River Health and Social Services Authority (HRSSA)
Yukon (YK)	1990	Yukon Mammography Program	Government of Yukon (Yukon Hospital Corporation)
British Columbia (BC)	1988	BC Cancer Breast Screening	BC Cancer Agency
Alberta (AB)	1990	Alberta Breast Cancer Screening Program (ABCSP)	Alberta Health Services
Saskatchewan (SK)	1990	Screening Program for Breast Cancer	Saskatchewan Cancer Agency
Manitoba (MB)	1995	BreastCheck	CancerCare Manitoba
Ontario (ON)	1990	Ontario Breast Screening Program (OBSP)	Cancer Care Ontario
Québec (QC)	1998	Programme québécois de dépistage du cancer du sein (PQDCS)	Ministère de la Santé et des Services sociaux
New Brunswick (NB)	1995	New Brunswick Breast Cancer Screening Services	New Brunswick Cancer Network (NB Department of Health)

Nova Scotia (NS)	1991	Nova Scotia Breast Screening Program	IWK Health Centre
Prince Edward Island (PEI)	1998	PEI Breast Screening Program	Health PEI
Newfoundland and Labrador (NL)	1996	Breast Screening Program for Newfoundland and Labrador	Cancer Care Program, Eastern Health

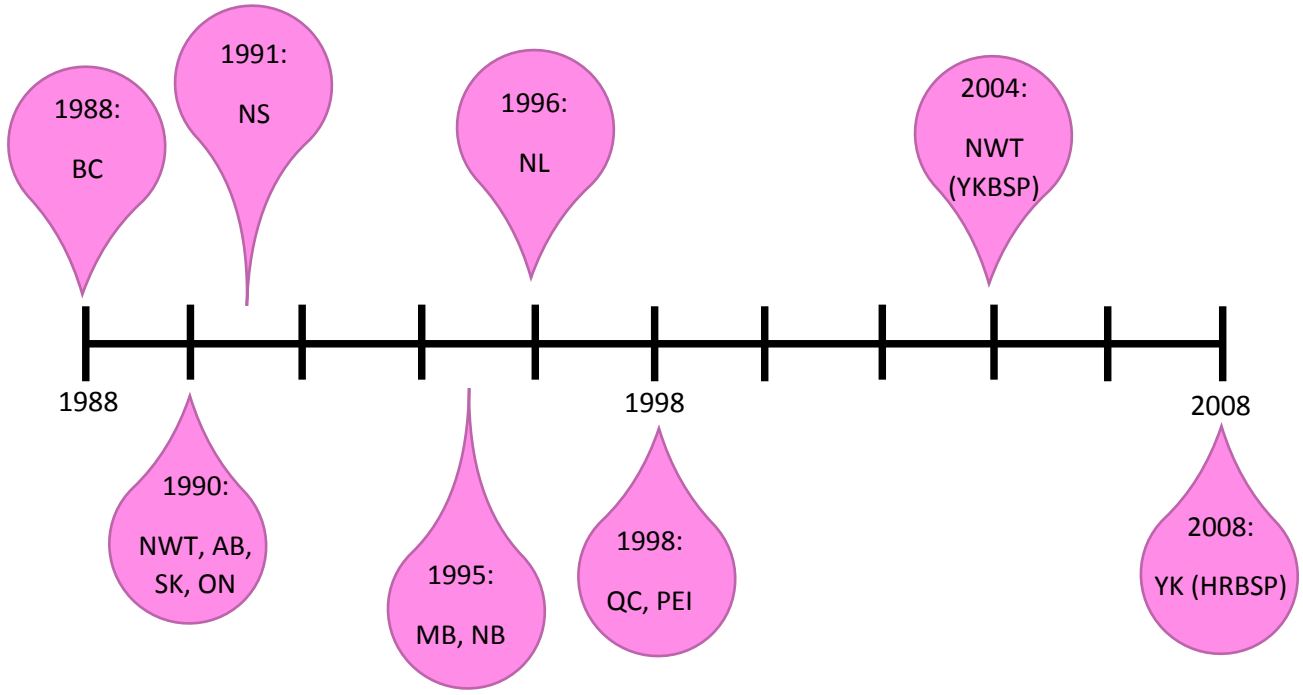
ǂ Information in this publication refer to opportunistic breast cancer screening.

Figure 2: Status of Breast Cancer Screening Programs in Canada



ǂ YKBSP and HRBSP support 15 of 33 communities, the remaining 18 communities that are not part of an organized program book mammograms through the diagnostic imaging department that services their region.

Figure 3: Implementation of Provincial/Territorial Organized Breast Screening Programs Over Time in Canada



Provincial and Territorial Screening Guidelines

Most provinces and territories recommend screening asymptomatic women at average risk with a mammogram every two years starting at age 50 until age 74 or 75. Some jurisdictions accept women under the age of 50 to screen for breast cancer, every one or two years, if: a woman chooses to get screened, has been identified as high risk, or has a physician recommendation.

Table 2: Provincial and Territorial Screening Guidelines

	Start age	Interval	Stop age	Exclusion criteria
NU	No organized screening program available			
NWT	50 (40 with referral from PCP)	1-2 years	74 (participants age 75+ have the option to continue, encouraged to speak to their PCP to see if screening is right for them)	
YK	50	2 years	74	• Personal history of breast cancer • Breast symptoms • Mammogram of both breast in the last 12 months

				• Age <40 years • Pregnant or pregnant in the last 4 months • Breastfeeding or breastfeeding in the last 4 months • Breast implants
BC	40	2 years	74	• Breast implants • Personal history of breast cancer
AB	50 (40-49 with PCP referral for first screen)	2 years	74 (75+ with PCP referral to continue screening)	• Age <40 years • Known diagnosis or history of breast cancer • Bilateral mastectomies • Signs and symptoms which could be associated with breast cancers • Follow up diagnostic imaging has been suggested • Work-up of an unknown primary malignancy or possible metastatic disease to the breast or axilla • Men and transgender individuals
SK	50 (49 accepted to mobile unit if turning 50 in the same calendar year)	2 years	75+	• Breast cancer in the last 5 years • Breast implants • Signs and symptoms of breast cancer
MB	50	2 years	74	• Symptomatic • Breast implants • Previous breast cancer diagnosis
ON	50	2 years	74 (75+ with referral from PCP)	• Personal history of breast cancer • Breast implants • Acute breast symptoms • Mastectomy • Screening mammogram within the last 11 months
QC	50	2 years	74	• Personal history of breast cancer
NB	50 (40 with referral from PCP)	2 years	74 (75+ with referral from PCP)	• Personal history of breast cancer
NS	40	40-49: annual 50-74: 2 years	No official stop age (participants age 75+ are encouraged to speak to their PCP to see if screening is right for them)	• Breast implants • Previous breast cancer • Breast symptoms
PEI	50	2 years	74	• Personal history of breast cancer • Breast implants • Breast symptoms

NL	50	2 years	74 (age 74+ only if previously enrolled in the program)	

Screening Recruitment Strategies

Participants are recruited into provincial and territorial breast screening programs using a variety of strategies. In most jurisdictions, participants can be referred to breast cancer screening programs through physician and self-referral.

In addition, letters of invitation are used as a recruitment strategy in six provinces. Other recruitment strategies used are advertising, referrals from nurse practitioners, phone calls and recommendations from healthcare providers.

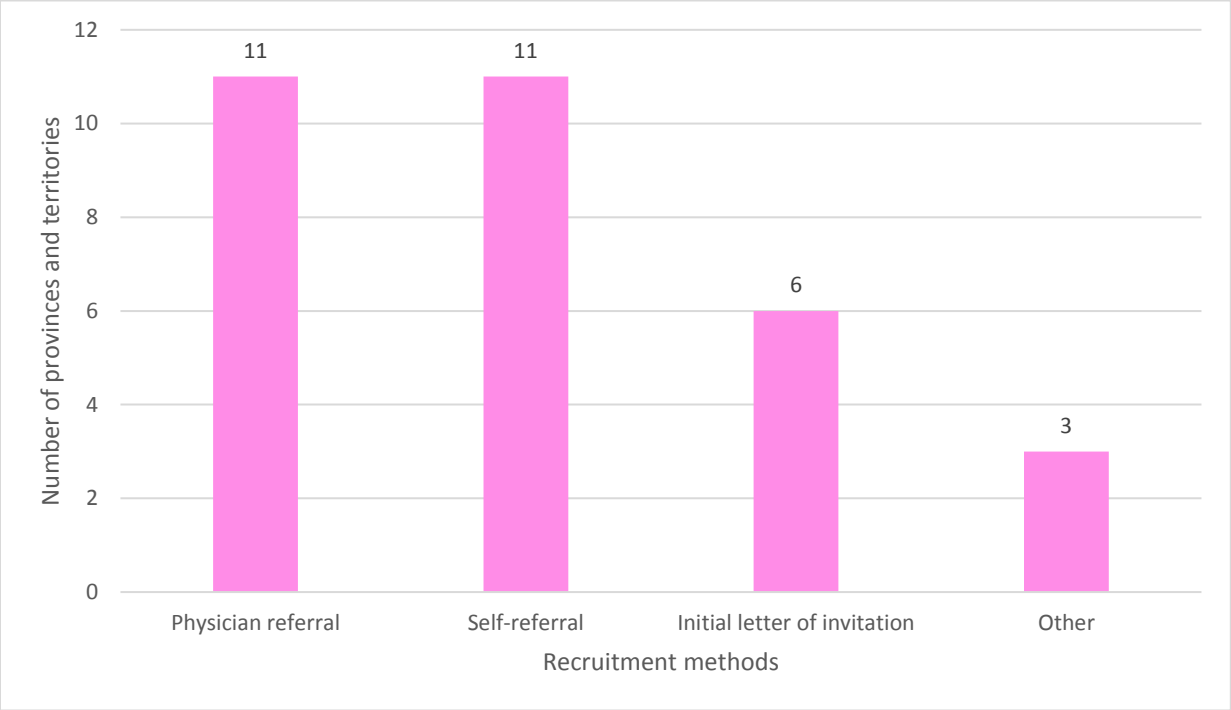
All jurisdictions target those aged 50-74 for recruitment, with the exception of Quebec which targets women aged 50-69.

Table 3: Breast Cancer Screening Recruitment Methods in Canada

	Recruitment methods				Target age group for recruitment
	Physician referral	**Self-referral**	**Initial letter of invitation**	**Other**	
NU	No organized screening program available				
NWT	✓	✓ ǂ			50-74
YK	✓	✓			50-74
BC	✓	✓		Advertising	50-74
AB	✓	✓	✓		50-74
SK	✓	✓	✓		50-74
MB	✓	✓	✓		50-74
ON	✓	✓	✓	Referral from nurse practitioner	50-74
QC	✓		✓		50-69
NB	✓	✓	✓		50-74
NS		✓		Phone call Healthcare provider recommendation	50-74
PEI	✓	✓			50-74
NL	✓	✓			50-74

ǂ Yellowknife's BSP accepts self-referrals (50-74) for persons living within the Yellowknife catchment area who have a designated PCP, all other locations they service require a referral from PCP to enter the program. Hay River BSP accepts self-referrals (50-74) for persons living in Hay River catchment with a designated PCP, but all other locations they service require a referral from PCP to enter into the BSP.

Figure 4: Breast Cancer Screening Recruitment Methods in Canada



Modalities for Breast Cancer Screening

Mammography is commonly used as an entry level screening test for breast cancer. All provinces are territories, with the exception of Nunavut, perform mammography screening within organized screening programs. Currently, no provinces or territories recommend clinical breast examinations.

Mammography Screening Technology

All provinces and territories, with the exception of Nunavut, are currently using digital radiography (DR) equipment to screen women in their programs. In addition, two provinces are using computed radiography, and Ontario is using analog mammography (screen-films) in conjunction with DR.

Most mammography screening is occurring in hospital settings. Other locations where screening is taking place is in mobile units, community clinics, screening centres, and private clinics.

Table 4: Primary Breast Cancer Screening Modalities in Canada

	Analog mammography[i]	Digital mammography		Location where mammography screening is conducted
		Digital radiography (DR)	Computed radiography (CR)	
NU	-	-	-	• Hospital
NWT		✓		• Hospital
YK		✓		• Hospital
BC		✓		• Community clinic (privately operated) • Hospital • Mobile unit
AB		✓		• Private clinic • Community clinic (privately operated) • Hospital • Mobile unit
SK		✓		• Private clinics • Screening centre • Hospital • Mobile unit
MB		✓		• Screening centre • Hospital • Mobile unit
ON	✓	✓		• Private clinic

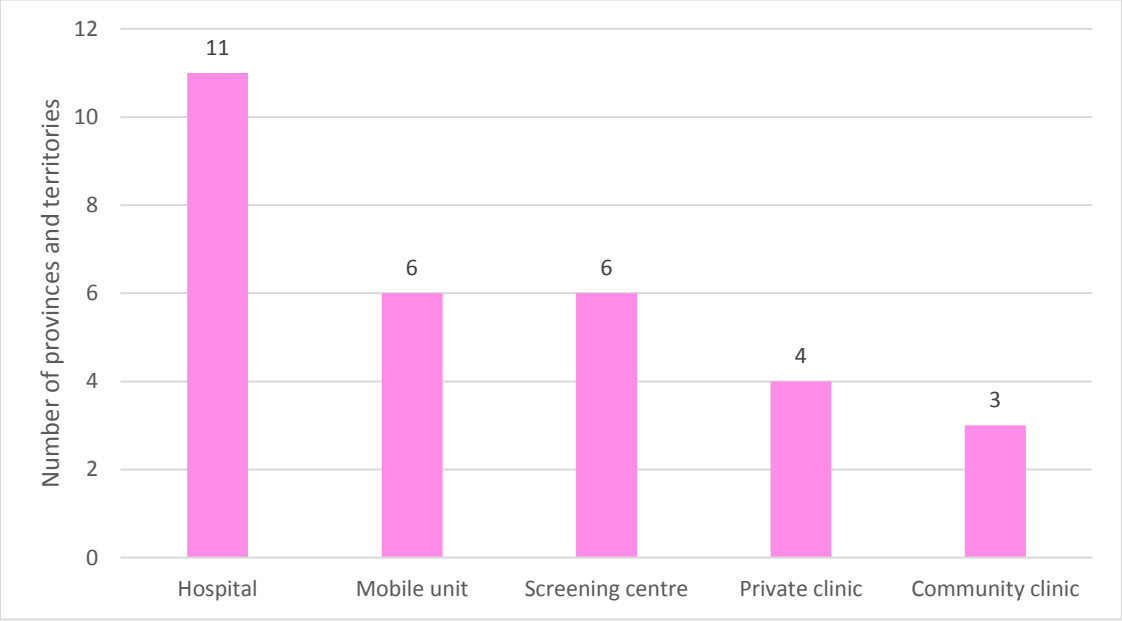
				• Screening centre • Hospital • Mobile unit
QC		✓	✓	• Private clinic • Community clinic • Screening clinic • Hospital • Mobile unit
NB		✓	✓	• Screening centre • Hospital
NS		✓		• Hospital • Mobile unit
PEI		✓		• Hospital
NL		✓		• Screening centre

ǂ Analog mammography: mammography images are printed on film

‡ Digital mammography: mammography images are captured and manipulated electronically and includes digital radiography (DR) and computed radiography (CR) systems

- No information was provided at the time the data was collected.

Figure 5: Location of Mammography Screening in Canada



Other Breast Cancer Screening Modalities

Other modalities used in Canada to screen women for breast cancer are tomosynthesis, magnetic resonance imaging (MRI) and ultrasound, and their use may be dependent on a woman's risk level. Tomosynthesis is being used in three provinces. Ontario screens women at high risk for breast cancer using MRI or ultrasound through the Ontario Breast Screening High Risk Program. British Columbia and Prince Edward Island also use supplemental MRI or ultrasound screening for high risk individuals.

Recent Highlights

Since 2016, New Brunswick has initiated the use of 2D tomosynthesis.

Table 5: Other Breast Cancer Screening Modalities in Canada

	Tomosynthesis[ŧ]		Other	Level of risk for use of modality
	2D	3D		
NU	-	-	-	N/A
NWT	No	No	No	N/A
YK	No	No	No	N/A
BC	✓ (research setting only)		MRI Ultrasound	Supplemental MRI screening for high risk (gene mutation, prior chest wall radiation) or ultrasounds if unable to be screened by MRI
AB	✓	✓	MRI Ultrasound	Dense breast, high risk
SK	No	No	No	N/A
MB	No	No	No	N/A
ON	No	No	MRI Ultrasound	Women ages 30 to 69 who are confirmed to be at high risk of developing breast cancer get screened once a year with a mammogram and MRI (or ultrasound if MRI is not medically appropriate)
QC	-	-	-	-
NB	✓	No	No	N/A
NS	No	No	No	High risk
PEI	No	No	MRI	High Risk - BRACA1, BRCA2 MRI is recommended
NL	No	No	No	N/A

ŧ Tomosynthesis (also known as 2D or 3D mammography): emerging technology that allows the breast to be viewed three-dimensionally

- No information was provided at the time the data was collected.

Correspondence Strategies and Follow-Up for Breast Cancer Screening

Recall letters or other forms of communication are used to notify women who have been screened by the program in the past to return for screening. Women who have a normal screening result are invited back at regular intervals (as per provincial/territorial screening guidelines) for subsequent screening. Women who have an abnormal screening result are invited for follow-up.

Recall Following a Normal Mammogram

All provinces and territories, with the exception of Nunavut, send out recall letters or a postcard to women after they obtain a normal mammography result.

The target age group for recall varies across Canada. Most jurisdictions target women aged 40 or 50 to 74. Quebec recalls women aged 50-69.

Table 6: Provincial and Territorial Recall Strategies Following a Normal Mammogram

	Recall method	Recall sent to	Recall issued by	Target age group for recall
NU	No organized screening program available			
NWT	Letter and phone call (YKBSP and HRBSP) Radiology report to PCP (Inuvik site only, no organized program)	Participants and PCP	Program	50-74 (40-49 with radiologist recommendation)
YK	Letter	Participant	Program	50-74 (40-49 with radiologist recommendation)
BC	Postcard Letters sent annually to PCP of participants who are overdue	Participants	Program	40-74
AB	Letter Postcard Phone call	Participant	Centre and program (program sends only after 120 days overdue)	50-74
SK	Letter	Participant	Program or agency	50-74
MB	Letter	Participant	Program	50-74
ON	Letter	Participant	Program	50-74
QC	Letter	Participant	Program	50-69
NB	Letter Phone call	Participant	Regional Health Authorities	50-74
NS	Postcard	Participants	Program	40-74

PEI	Letter	Participant and PCP	Program	40-74
NL	Letter	Participant	Centre	50-74

Most provinces and territories send out reminder notifications via letter if no response was received after the first communication. Eight jurisdictions issue reminders if participants do not initiate screening after the first recall attempt.

Table 7: Breast Cancer Screening Reminder Notifications in Canada

	Reminder notifications
NU	N/A
NWT	Reminder notification sent
YK	None
BC	A series of up to 4 postcards are sent over a 12 month period as reminder notifications
AB	None
SK	Reminder letter sent 2 weeks prior to mammography date if no appointment is scheduled
MB	Reminder is sent 2-3 weeks after the recall if no response, continue to recall and send letter if no response on annual basis based on last screen date and postal code
ON	Reminder letter sent by screening program approximately 10 weeks after the recall letter if screening is not initiated
QC	Reminder letter sent a few weeks after the recall letter if screening is not initiated
NB	None
NS	Reminder postcards sent for 3 consecutive years on the same date each year, central booking staff will also call participant if time allows
PEI	Reminder letter sent 5 months prior to women's due date with an overdue letter 2 months following the women's due date if screening in not initiated
NL	None

Follow-Up After an Abnormal Mammogram

All provinces and territories, with the exception of Nunavut, send recall letters to both primary care providers and participants after an abnormal (positive) mammography result. Some jurisdictions also follow-up with participants over the phone to inform them of their results and to schedule a follow-up appointment.

In the absence of a primary care provider, seven provinces help participants find a suitable primary care provider in order to follow-up after an abnormal mammography result. Other jurisdictions require participants to have a primary care provider in order to be eligible for a screening mammogram.

When participants cannot be reached (e.g. return mail), most provinces and territories contact the primary care provider or obtain current contact information from the primary care provider.

The location for conducting diagnostic mammograms after an abnormal result varies across Canada. Some jurisdictions conduct diagnostic mammograms at the screening centre/program. Other provinces and territories conduct these types of mammograms at diagnostic imaging centres or refer participants to Breast Risk Assessment units.

Table 8: Provincial and Territorial Follow-Up Strategies Following an Abnormal Mammogram

	Communication method	Process when participants do not have a PCP	Process when participants cannot be reached	Location of diagnostic mammogram
NU	No organized screening program available			
NWT	• YKBSP: Letter to participant and PCP, phone call to participant to coordinate follow-up • HRBSP: Letter sent to PCP	Participant must have a PCP in order to be screened	YKBSP: Program Coordinator will contact the patient by telephone if further imaging is required. If it is something that cannot be completed in Yellowknife a letter is sent to inform the PCP, who is responsible for the referral. If letter is returned the program will check electronic and hospital systems to confirm address and then call patient to confirm address with them. HRBSP: No specific policy. Program Coordinator will call the patient's listed phone number if patient is from Hay River or Enterprise, if patient lives in an outlying community a call is placed to the community health centre/PCP.	• Yellowknife or Edmonton, Alberta
YK	• Letter to participant and PCP	N/A	Follow-up with PCP	• Screening program
BC	• Letter to participant and PCP	Participant must have a PCP in order to be screened	Follow-up with PCP	• Assessment unit

	• Diagnostic facility responsible to contact participant and arrange for first round of diagnostic testing (Fast Track)			
AB	• Letter to participant • PCP informed by radiologist report	Program will assist participant with finding a PCP either before the screen or after an abnormal result	Screen site will notify participant and PCP	• If mammogram was completed at a facility that can do diagnostic mammograms, then usually done at that facility • Community clinics • Hospital facilities
SK	• Client navigator calls women before sending letter • Letter to participant and PCP	Client navigator works with participant to find PCP	Follow-up with PCP for current phone number	• Diagnostic breast imaging centres (hospitals, private radiology clinics, and/or Breast Health Centre)
MB	• Phone call to participant	Provide information to participant to obtain PCP (code for expediting due to abnormal result); if no PCP available, Medical Lead will take on care of patient for initial follow-up tests	First try to phone participant, if can't reach by phone, send letter, and also send letter to PCP to let them know result and that we have been unable to reach woman. If mail returned, contact PCP again, notes made in program database for reference.	• Diagnostic imaging centre
ON	• Letter and phone call to participant	Program will assist participant with finding a PCP	Program site will notify PCP and help schedule a follow-up. Program site may call or send letter to participant requesting to follow-up with screening site.	• Screening program • Assessment unit

QC	• Letter to participant and PCP	Voluntary PCP is assigned to the participant	Program coordinators contacts participant or PCP 45 days (or less) after an abnormal screening test if no supplementary exam has been confirmed in the information system. If participant is still unreachable after 90 days, send registered mail.	• Screening program (designated referral centres for investigations)
NB	• Phone call to participant • Letter sent to PCP • Letter sent to participants in some zones	No official process	No official process	• Sites vary across zones
NS	• Letter to participant and PCP	Program works with the coordinator of each screening site to get a PCP in the area to accept the report	Central booking site will call the participant. If not successful, central booking staff will contact the PCP to obtain participant's current contact info	• Diagnostic breast imaging departments located in hospitals
PEI	• Letter to participant and PCP	Provincial Coordinator (or on call surgeon) contact the participant	Follow-up with phone call to PCP	• Screening program
NL	• Letter to participant and PCP	Program will assist participant with finding a PCP	Check alternate source for address, if more recent address found re-send. Otherwise follow-up with PCP	• Assessment unit

Breast Cancer Screening for Women at Elevated and High Risk

Screening for Women at Elevated Risk

Women at elevated risk are individuals who are considered to have a greater than average risk for developing breast cancer, but a less than the highest risk group. This may include women who have a family history of breast cancer, have high breast density, used hormone replacement therapy in the past, or are at high risk for benign breast disease. This differs from women at high risk who have a greater lifetime risk of developing breast cancer or developing more aggressive breast cancers at an earlier age due to specific factors (e.g., genetics).

Ten provincial/territorial breast cancer screening programs manage participants at elevated risk of developing breast cancer. Some provincial and territorial screening programs define elevated risk as having first-degree family history of breast cancer, using hormone replacement therapy, having a breast density of over 75%, having a history of high-risk benign breast disease, and having a recommendation by a radiologist. Other provincial and territorial breast cancer screening programs only have one to four of these characteristics listed to define elevated risk. Other characteristics that are listed as risk factors include: having personal or first-degree family history of ovarian cancer, three or more second-degree family history of breast or ovarian cancer, and documented pathology of high-risk lesions. Quebec and New Brunswick do not classify participants as elevated risk of developing breast cancer.

Table 9: Provincial and Territorial Definitions of Elevated Risk for Breast Cancer

	First-degree family history	Hormone replacement therapy	Breast density > or ≥ 75%	History of high risk benign breast disease	Radiologist recommendations	Other
NU	✓	✓			✓	
NWT	✓	✓	✓	✓	✓	✓ Personal history of breast cancer ✓ Personal history of other cancer (i.e. ovarian cancer) ✓ 3 or more second-degree family history (breast or ovarian)
YK	✓				✓	
BC	✓			✓		
AB	✓		✓	✓	✓	
SK	✓		✓	✓	✓	

MB	✓	✓	✓	✓	✓	✓ At least one 1st or 2nd degree female relative on either maternal or paternal side of the family with a history of breast or ovarian cancer that does not fall into the high increased risk category ✓ Ashkenazi decent
ON	✓		✓	✓	✓	✓ Personal history of ovarian cancer ✓ First-degree family history of ovarian cancer ✓ Two or more first-degree relatives with breast cancer at any age ✓ Documented pathology of high risk lesions
QC	Does not classify participants as elevated risk					
NB	Does not classify participants as elevated risk					
NS	✓	✓	✓	✓	✓	
PEI	✓			✓	✓	
NL	✓		✓	✓		

Women who are found to be at elevated risk of developing breast cancer are in most cases screened annually with a mammogram, starting at age 40 or 50.

Table 10: Management of Participants at Elevated Risk by Provincial and Territorial Screening Programs

	Does the program manage participants at elevated risk?	Screening recommendations for elevated risk			
		Screening modality	Start age	Interval	Stop age
NU	Yes (referred to diagnostic centre)	-	50	-	74
NWT	Yes	YKBSP: mammography and ultrasound HRBSP: mammography	40 (40 with referral from PCP, 50 self-referral)	1-2 years, based on radiologist recommendation	74 (75+ have the option to continue screening)
YK	Yes	Mammography	-	Annual	-
BC	Yes	Mammography	40	Annual	74

AB	No (referred back to PCP)	N/A	N/A	N/A	N/A
SK	Yes	Mammography	40	Annual	74
MB	Yes	Mammography	50	Varies depending on level of risk and radiologist recommendation	74
ONǂ	Yes	Mammography	50	Annual	74
QC	N/A	N/A	N/A	N/A	N/A
NB	N/A	N/A	N/A	N/A	N/A
NS	Yes	Mammography	40	Annual	74
PEI	Yes	Mammography	40	Annual	74
NL	Yes	Mammography	50‡	Annual	74‡

ǂ The OBSP does not use the term "elevated risk", however, there are several reasons a woman in the OBSP will be recalled by the program in one year: documented pathology of high risk lesions; a personal history of ovarian cancer; two or more first-degree female relatives with breast cancer at any age; one first-degree female relative with breast cancer under age 50; one first-degree relative with ovarian cancer at any age; one male relative with breast cancer at any age; breast density ≥75 percent at the time of screening; or recommendation by the radiologist at the time of screening or assessment

‡ Start/stop age is variable depending on conditions for elevated risk designation (e.g. breast density ≥75% may be a transitory condition, therefore start/stop age would be adjusted)

- No information was provided at the time the data was collected.

Breast Density

Evidence shows that women with dense breasts have an increased risk of developing breast cancer, and that having dense breasts can make it more difficult to detect breast cancer by mammogram alone[3]. What is not clear, however, is whether more frequent mammographic screening or 'supplemental screening' with ultrasound or MRI improves outcomes for these women.

In Canada, some jurisdictions classify women with high breast density as being at elevated risk and consequently these women are, in most cases, eligible for more frequent screening. Most of these jurisdictions define high breast density as ≥ 75% glandular tissue, and Alberta defines it as ≥ 50% glandular tissue.

Nine provincial/territorial breast cancer screening programs collect information on breast density. In Ontario, women who have dense breasts receive a breast density fact sheet with their mammography results. Participants are also notified that their next mammogram will be in a year due to dense breast tissue. British Columbia also notifies participants of their breast density. This notification is currently upon request, however, by the end of 2018, notifications will go out to both screening participants and their primary care providers. In Saskatchewan, participants are notified if they have dense breasts, but are not informed what their dense percentage is. These women are invited back for annual screening.

Figure 6: Breast Density Data Collection and Notification in Canada

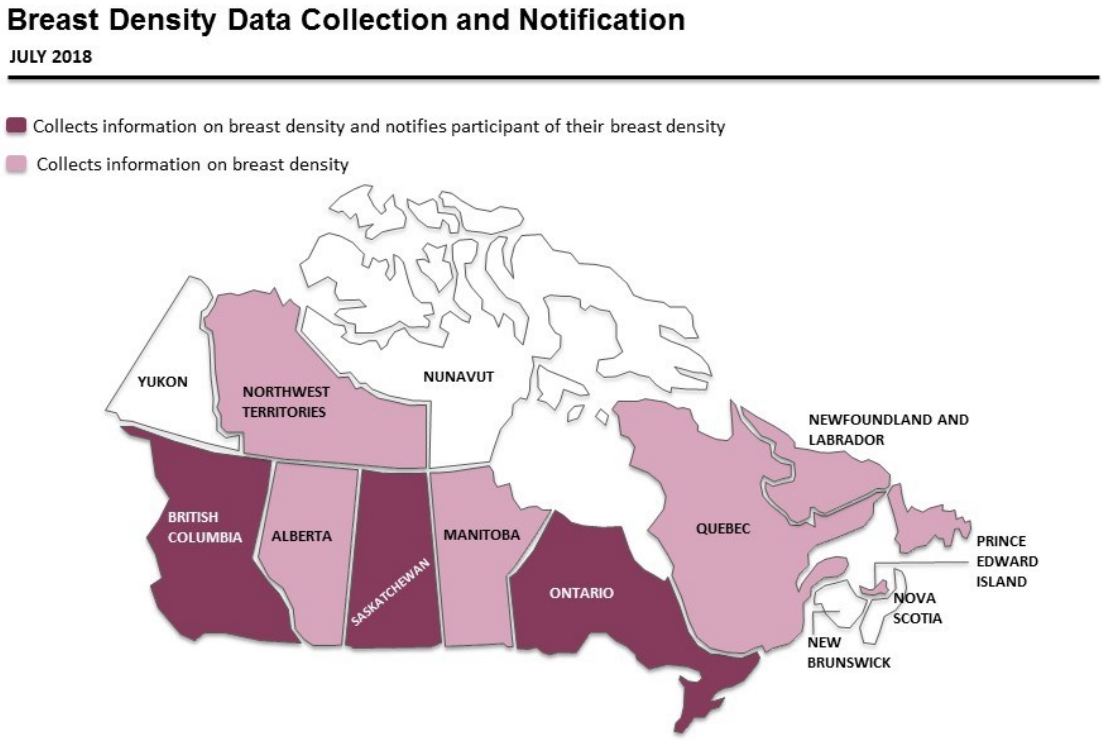


Table 11: Definition and Data Collection for High Breast Density by Screening Programs in Canada

	Definition of high breast density	Does the program collect information on breast density?	Are participants notified of their breast density?
NU	-	-	-
NWT	≥ 75% glandular tissue	Yes	No (documented on mammogram report to PCP)
YK	N/A	No	N/A
BC	BI-RADS[t]	Yes	Yes (currently upon request, will provide breast density notification to women and PCP by the end of 2018)
AB	≥ 50% glandular tissue	Yes	No (participants can request information from their PCP as all screening radiology reports density information)
SK	≥ 75% glandular tissue	Yes	Yes (informed that they have dense breast, but not informed what their dense percentage is)
MB	≥ 75% glandular tissue	Yes	No (participants can request a copy of their screening report which has the density recorded on it, but

			screening reports are not routinely sent to women, just a letter summarizing their result (e.g. abnormal/normal) and next steps)
ON	≥ 75% glandular tissue	Yes	Yes (participant receives a screening results letter with a breast density fact sheet, letter informs participant that next mammogram will be in one year due to dense breast tissue)
QC	≥ 75% glandular tissue	Yes	No
NB	N/A	No	N/A
NS	≥ 75% glandular tissue	No	No
PEI	≥ 75% glandular tissue	Yes	No
NL	≥ 75% glandular tissue	Yes	No

- No information was provided at the time the data was collected.

ǂ BI-RADs categories for breast density: 1- almost entirely fatty (<25% glandular); 2- scattered fibroglandular densities (25-50% glandular); 3- heterogeneously dense (51-75% glandular); 4- extremely dense (>75% glandular).

Screening for Women at High Risk

Women at high risk have a greater lifetime risk of developing breast cancer or developing more aggressive breast cancers at an earlier age. Currently, there are no national guidelines for screening women at high risk and screening protocols vary across jurisdictions. The definition of high risk of developing breast cancer also varies across Canada.

Table 12: Provincial and Territorial Definitions of High Risk for Breast Cancer

	Known carrier of a deleterious gene mutation (e.g. BRCA1, BRCA2)	First-degree relative of a mutation carrier (e.g. BRCA1, BRCA2) and have declined genetic testing	At ≥ 25% lifetime risk of breast cancer (assessed using IBIS or BOADICEA risk assessment tool)	Received chest radiation before age 30 and at least 8 years previously	Other
NU	✓	✓	✓	✓	
NWT	✓	✓		✓	
YK	-	-	-	-	-
BC	✓	✓		✓	
AB	✓	✓	✓	✓	✓ Ashkenazi decent ✓ Atypical Ductal Hyperplasia (ADH), Atypical Lobular Hyperplasia (ALH), and Lobular Carcinoma In Situ (LCIS)

SK	✓	✓	✓	✓	✓ Abnormal mammograms, breast density, atypical ductal hyperplasia, Lobular Carcinoma In Situ (LCIS), physician/radiologist request
MB	-	-	✓	-	✓ Ashkenazi decent ✓ Atypical Ductal Hyperplasia (ADH), Atypical Lobular Hyperplasia (ALH), and Lobular Carcinoma In Situ (LCIS)
ON	✓	✓	✓	✓	✓ Ages 30-69, no acute breast symptoms; additional deleterious gene mutations that confer higher risk of breast cancer (e.g., TP53, PTEN, CDH1)
QC	Does not classify participants as high risk				
NB	Does not classify participants as high risk				
NS	✓	✓	✓	✓	
PEI	✓	✓	✓	✓	
NL	✓	✓		✓	

- No information was provided at the time the data was collected.

Five provincial/territorial breast cancer screening programs manage participants identified as high risk of developing breast cancer by recommending mammography, MRI and/or ultrasound screening. Depending on the province or territory, guidelines recommend that women at high risk start screening at age 30,40 or 50 and stop at age 69 or 74.

Table 13: Management of Participants at High Risk by Provincial and Territorial Screening Programs

	Does the program manage participants at high risk?	Screening recommendations for high risk			
		Screening modality	Start age	Interval	Stop age
NU	Yes (referred to diagnostic centre)	Mammography	Varies	-	74

NWT	Yes (mammography only other modalities managed by PCP)	YKBSP: mammography and ultrasound HRBSP: mammography	40	Based on radiologist recommendation	74
YK	No	N/A	N/A	N/A	N/A
BC	No (eligible for annual routine screening, but no supplemental screening, referred to high risk program)	N/A	N/A	N/A	N/A
AB	No	N/A	N/A	N/A	N/A
SK	No (managed by PCP, in Saskatoon may be referred to the Centre of Care for High Risk Program)	N/A	N/A	N/A	N/A
MB	Yes	Mammography	50	Annual (can vary)	74
ONǂ	Yes (referred to high risk program)	Mammography and MRI (or ultrasound if MRI is not medically appropriate)	30	Annual	69
QC	N/A	N/A	N/A	N/A	N/A
NB	N/A	N/A	N/A	N/A	N/A
NS‡	No (referred back to PCP)	N/A	N/A	N/A	N/A
PEI	Yes (referral from PCP is required)	Mammography and MRI	40	Annual	74
NL	No (referred back to PCP)	N/A	N/A	N/A	N/A

ǂ Participants require a physician referral and confirmed high risk status to participate in the High Risk OBSP. Participants aged 70-74 in the High Risk OBSP get screened with annual mammogram only.

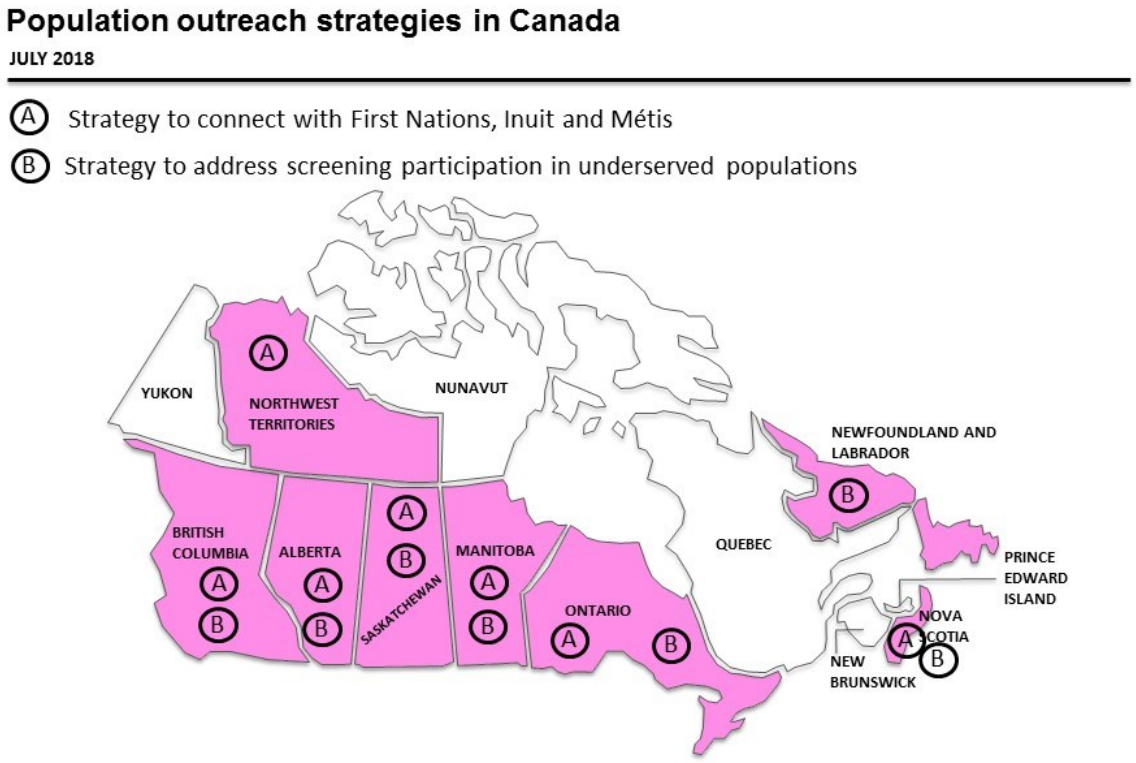
‡ Nova Scotia Breast Screening Program is working on obtaining approval of high risk screening clinical practice guidelines.

- No information was provided at the time the data was collected.

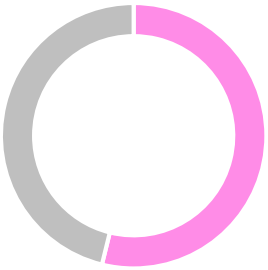
Population Outreach

In general, screening participation rates are low among First Nations, Inuit and Métis[4]. This is also the case for low-income individuals, new immigrants, individuals living in rural communities, and other underserved populations[5]. A variety of strategies have been implemented across Canada to help address screening participation in underscreened populations.

Figure 7: Population Outreach Strategies in Canada



First Nations, Inuit and Métis



7 Canadian jurisdictions have implemented strategies to connect with First Nations, Inuit and Métis

In general, participation rates for breast cancer screening are much lower among First Nations, Inuit and Métis than non-Indigenous people in Canada. There is considerable variation in screening participation across geographic location.[4]

The breast cancer screening program in Northwest Territories collects Indigenous and/or people-specific data (e.g. First Nations, Inuit, and/or Métis identifiers), which is identified through patient health care numbers. This information is utilized to report screening rates by ethnicity to the Northwest Territories Department of Health. British Columbia also collects Indigenous and/or people-specific data (e.g. First Nations, Inuit, and/or Métis identifiers) through self-reporting as part of a background survey. This data is used to report on program participation rates. Single ethnicity responses are compared with National Household Survey data. Similarly, Manitoba has a questionnaire which participants fill out at their appointment which includes a question asking “Are you a Canadian Aboriginal person (First Nations, Métis, or Inuit). Participants can respond “yes”, “no”, or “no response”. This information is used for internal operations and planning. Furthermore, Alberta is currently in the process of working with First Nations groups to obtain this data for their province.

Six provinces and one territory have implemented strategies to connect with First Nations, Inuit and Métis. Strategies identified addressed engaging with First Nations, Inuit and Métis in decision-making and informing approaches to culturally appropriate screening, reaching First Nations, Inuit and Métis through program resources, and engaging with healthcare providers working directly with First Nations, Inuit and Métis communities. Specifically, some programs engage with First Nations, Inuit and Métis in the development of cancer plans and through working groups. Dedicated mobile visits have also been implemented into several screening programs in order to reach First Nations, Inuit and Métis communities, along with other programs resources such as culturally appropriate material, presentations and social media campaigns. In addition, some strategies were put in place to help educate health care providers working directly with First Nations, Inuit and Métis communities.

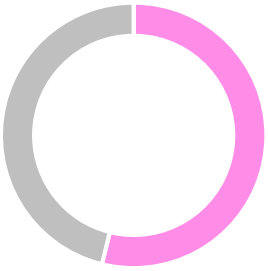
Table 14: Strategies to Connect with First Nations, Inuit and Métis Communities in Canada

	Strategies to connect with First Nations, Inuit and Métis
NWT	• HRBSP: Program coordinator attends community health fairs with a booth and educational material. Travel to communities outside of health fairs and give presentations on breast health. Have pamphlets designed for teenagers at public health and community health fairs. • YKBSP: Posters in different languages, videos, attended health symposium in Dettah, NWT.
BC	• 'Screen for Wellness' campaign in partnership with First Nations Health Authorities. • Targeted mobile stops in indigenous communities.
AB	• Program's mobile units visit approximately 20-25 First Nations and Métis communities. • Program also works with Alberta Health Service Indigenous Health Program, First Nations and Inuit Health Branch and Community partners to improve cancer screening.
SK	• North Mobile Health Unit that travels the northern part of the province providing information to First Nation groups about the importance of getting cervical, colorectal and breast screening. Awareness is the primary strategy at this time. • Coordinators are invited to attend events held in First Nations communities. • Saskatchewan's Breast Screening Coordinator and Nurse Navigator contact each community personally when the mammography mobile is arriving with information on breast screening who we are and what we do. They also work closely with health care facilities on making appointments for woman who do not speak English or do not have phones or mail.
MB	• Provide resources specifically for First Nations communities as well as some resources in Cree, and Ojibwe. • Mobile travels to many communities (including remote, northern, and Reserve communities) and invites communities to attend the closest site. • Maintain and initiate partnership with communities to increase screening rates through relationship development and education. • Provide an opportunistic booking process to help ensure easy access for women being seen at primary care clinics for other health concerns, including accommodating walk-in or same day appointments as required. • Maintain relationships with Tribal Councils. • Provide presentations and displaying at health fairs in First Nation communities and other First Nations events such as Manito-Ahbee. • Work with First Nations and Inuit Health Branch to provide information regarding breast cancer screening to Community Health Nurses and NIC's. • Partnered with Saint Elizabeth to create a webinar about breast cancer screening available on the Saint Elizabeth website. • Partner with First Nation, Métis and Inuit Cancer Control (FNMICC), CCMB • 2013-2015 – CBCF grant – using a community engagement approach, worked with 9 First Nations communities to develop a poster, brochure, and toolkit for women and community healthcare workers in First Nations communities. • Provide a tailored booking process for appointments in First Nations communities to be more responsive to the community needs and provide additional education to First Nation Communities prior to mobile visit, tailoring the resources for each community as needed (i.e. pamphlets, posters etc.).

	• Arrange transportation (including flights for 12 communities) and partner with communities to coordinate group trips for women, including many remote northern communities, to have their screening completed at the nearest screening site. • Education and awareness through local radio, newspaper, as well as on social media and on community event pages.
ON	• The Aboriginal Cancer Control Unit (ACCU) within CCO works with regions in Ontario to improve cancer screening rates among First Nations, Inuit and Métis populations. • CCO implemented an automated Screening Activity Report (SAR) to support breast screening with relevant physicians and Department of Indigenous Services Canada (DISC) nurses serving 27 First Nations communities. • The Improving Cancer Screening among First Nations and Métis Communities research project, a collaboration between CCO's ACCU and Sunnybrook Research Institute (SRI) and funded by CIHR and CCO, includes an analysis of cancer screening health policy, two community-based cancer screening research projects, and an evaluation of CCO's Under/Never Screened initiatives. • These projects have supported the development of a Knowledge Translation and Exchange (KTE) action plan that aims to improve cancer screening participation among First Nations, Inuit and Métis populations in Ontario. • The KTE action plan includes several recommendations to CCO, regional cancer programs (RCPs), and other stakeholders, as well as several Knowledge Products (for example, cancer screening pathways to help community members navigate the screening process). • CCO is also building regional capacity to address First Nations, Inuit and Métis cancer screening through the development of Regional Aboriginal Cancer Plans. These plans were developed through direct engagement and feedback from the First Nations, Inuit and Métis communities, the RCPs and CCO. • More specifically with the North West RCP, the ACCU has supported relationship development between the RCP and First Nations, Inuit and Métis communities to expand the reach and uptake of the mobile coach (i.e. mobile mammography unit). • Through the Sioux Lookout Working Group (comprised of regional and community service providers), there is ongoing work to increase participation in all three screening programs (breast, cervical, and colorectal) in northern and remote communities. • CCO has developed and continues to support First Nations, Inuit and Métis communities and healthcare providers in educational initiatives through the use of fact sheets and the Cancer Screening Toolkit (including videos and workshops). • CCO has developed a recommendation report to build organizational capacity and plan to develop First Nations, Inuit and Métis identifiers to inform and support cancer screening. CCO has also developed and signed formalized agreements (Relationship Protocols, Memorandums of Understanding) with provincial/territorial organizations (PTOs), Independent First Nations, Inuit Service Providers, and the Métis Nation of Ontario which outline our approach to working together. • CCO has supported a cancer screening pilot program at Wequedong Lodge of Thunder Bay that facilitated access to cancer screening for First Nations community members from remote communities throughout Northwestern Ontario while in Thunder Bay for other medical services. The Wequedong Lodge cancer screening pilot program made appointments for First Nations women to access mammograms while in Thunder Bay.

NS	• Program offers dedicated mobile stops for First Nations communities. Nova Scotia Breast Screening Program has a dedicated central booking staff who works with a liaison person in the First Nations community to coordinate the yearly mobile stop.

Underserved Populations



7 Canadian jurisdictions have implemented strategies to help address participation in underserved populations

Screening participation rates are low among low-income individuals, new immigrants, and those living in rural and remote communities when compared to the general Canadian population.[5]

Seven provinces have implemented strategies to help address participation in underserved populations. These strategies focus primarily on individuals in rural communities, new immigrants and low-income individuals. Some of the strategies identified reach underserved populations through social media campaigns, presentations, and program material, which focus on increasing awareness and education on breast cancer screening. Other strategies are geared towards healthcare providers, who in turn work directly with underserved populations.

Table 15: Strategies to Address Breast Cancer Screening Participation in Underserved Populations in Canada

	Specific target group	Strategy to address participation
BC	• Individuals in rural communities	• Targeted social media campaigns (Facebook) to align with mobile visits.
AB	• Individuals in rural communities	• Initiation of a Creating Health Equity in Cancer Screening initiative. The goal of the Creating Health Equity in Cancer Screening (CHECS) project is to develop a method to assess the impact of the social determinants of health on cancer screening rates, use a systematic approach to identify under/never screened areas, and to collaborate with the relevant stakeholders in developing a strategy to increase breast, cervical, and colorectal cancer screening. This project will assist policy development, healthcare providers, and community agencies to better support populations that are under/never

		screened. CHECS will begin in metro Calgary, and will be expanded to other regions of the province, as applicable.

SK	• New immigrants
	• Low income individuals
	• Individuals in rural communities
		• The Coordinators for breast, cervical and colorectal screening regularly present at various events where attended by underserved populations. Some examples are:
		  ○ The Open Door Society (ODS) is a non-profit organization that provides settlement and integration services to refugees and immigrants. There is one located in Regina and Saskatoon. ODS is committed to meeting the needs of newcomers by offering programs and services that enable them to achieve their goals and participate fully in the larger community. The Coordinators provide education to immigrants on screening. Interpreters may attend these sessions to assist immigrants with translation. PowerPoint slides include several pictures to help immigrants understand the content.
		  ○ Global Gathering Place (GGP), a non-profit drop-in centre that provides services for immigrants and refugees in Saskatoon. Global Gathering Place helps newcomers adapt to life in Canada by offering support and skill development, acceptance, and a welcoming environment.
		  ○ Saskatchewan has implemented a North Mobile Health Unit that travels the northern part of our province providing information to groups about the importance of getting cervical, colorectal and breast screening. Awareness is our primary strategy at this time. These groups can include First Nations, new immigrants, low-income individuals and individuals in rural communities.
		• Saskatchewan International Physician Practice Assessment (SIPPA) is a 'practice readiness' competency assessment program in Saskatchewan. SIPPA was implemented in 2011 to ensure that internationally trained physicians who wish to practice medicine in Saskatchewan possess the appropriate clinical skills and knowledge to provide quality patient care. The Coordinators discuss the Screening programs to this group of physicians. The physicians will encounter underserved populations in their practice.
		• Healthcare Provider Conferences. The Coordinators are invited to conferences to host a booth or provide an education session. The healthcare providers in turn work with underserved populations in their practices.

MB	• New immigrants	• -

	• Low-income individuals • Individuals in rural communities	
ON	• Individuals in rural communities	• Two mobile coaches (northwestern Ontario and the Hamilton Niagara Haldimand Brant region) with mammogram machines on board that provide women with breast cancer screening.
NS	• African Nova Scotians • Women's prisons	• Patient navigator attends a women's health fair at the women's prison every year to promote breast screening. • A breast screening brochure targeting African Nova Scotia women was developed in 2016, and was distributed at a health fair in the African Nova Scotian community of North Preston.
NL	• Individuals in rural communities	• -

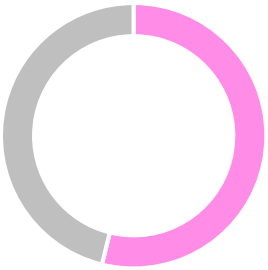
LGBTQ2+ Communities

In 2016, Nova Scotia developed a clinical practice guideline for breast cancer screening for trans people. Breast cancer screening is recommended every two years for trans women ages 50-69 who have taken gender-affirming hormones for more than five years. For trans men, if gender-affirming chest surgery has not been performed, then breast screening can start at age 40 and will be followed by the screening program.

In Manitoba, there is no official policy on the screening of trans people, but trans men and women who have breast tissue, and do not have breast implants, over the age of 50 can attend BreastCheck. Updated guidelines will be released in fall 2018 which outlines more specific guidance for healthcare providers and trans people.

In addition, the Ontario Breast Screening Program does not currently have a policy on the screening of trans people. However, a review of the evidence on screening of trans people has been completed, and an expert working group was convened to discuss and evaluate the evidence. Recommendations from this working group will inform policy development for the appropriate inclusion of trans people in the Ontario Breast Screening Program.

Improving Screening Program Participants' Experience



7 Canadian jurisdictions have implemented strategies to help improve participants' experience

Seven provinces have implemented strategies to help improve screening participants' experience. These strategies primarily include the use of nurse navigators.

Table 16: Strategies to Improve Breast Cancer Screening Participants' Experience in Canada

	Strategies to improve participants' experience
BC	• Improved Participant Experience Working Group developed to identify screening visit initiatives. Came up with 'Just Ask' campaign to help women address concerns at time of screening mammogram.
AB	• Facilitated referral to increase rural women's access to diagnostic facilities. Nurse navigators are assigned to women diagnosed with cancers. Some community clinics have started providing patient controlled compression.
SK	• Nurse navigators follow all abnormal mammograms. Recently the role has expanded to follow BIRAD 6 clients from abnormal to a cancer centre referral. The nurse navigators have improved communication capability to the cancer centre electronic system. This allows a smoother transition for clients diagnosed with cancer.
MB	• Screening clerks monitor women through screening journey and ensure appropriate actions are taken and CancerCare Manitoba has nurse navigators for women diagnosed with cancer.
ON	• Ontario Breast Screening Program assessment sites help guide women with abnormal screening results through to diagnosis by coordinating follow-up tests and documenting the results of those tests. • High Risk Ontario Breast Screening Program uses nurse navigators at each screening site to coordinate participant appointments and support them through the screening and assessment processes/pathway.
NB	• Some screening sites have Breast Health Navigators. These have not specifically been initiated by the provincial program.
NS	• Screening program has a full time Patient Navigator, who is a resource for healthcare providers and for patients. She is there to alleviate their anxiety by answering questions, from the time of their abnormal mammogram to their core biopsies.

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