

Nova Scotia Breast Screening Program Annual Report 2025



Message from the Program Manager

As we look back on 2024, the Nova Scotia Breast Screening Program continues to evolve to meet the needs of Nova Scotians. While challenges remain—particularly with wait times for screening and diagnostic follow-up—we continue to focus on improving access, communication, and patient support, working collaboratively within the broader health system.

One of the most significant enhancements this year was the introduction of a Nurse Navigator role. This position provides personalized support to individuals navigating abnormal results and follow-up care, helping to reduce anxiety and improve coordination during what can be a stressful time.

With the launch of email reminders and YourHealthNS, clients can now view their breast screening results and appointment information online and receive email reminders directly from NSBSP to help them stay on track with their screening schedule. These innovations reflect our commitment to improving patient experience and leveraging technology to enhance care.

Despite ongoing human resource challenges and longer wait times, participation among first-time screeners has surpassed pre-pandemic levels, and mobile screening continues to play a vital role in rural communities. These successes highlight the shared efforts across the system to support equitable access to breast screening services.

Looking ahead, NSBSP will continue to engage with system partners to support high-quality breast screening services for Nova Scotians.

Thank you to our team and all those across the health system whose commitment continues to advance breast health outcomes in the province.

Warmest regards,



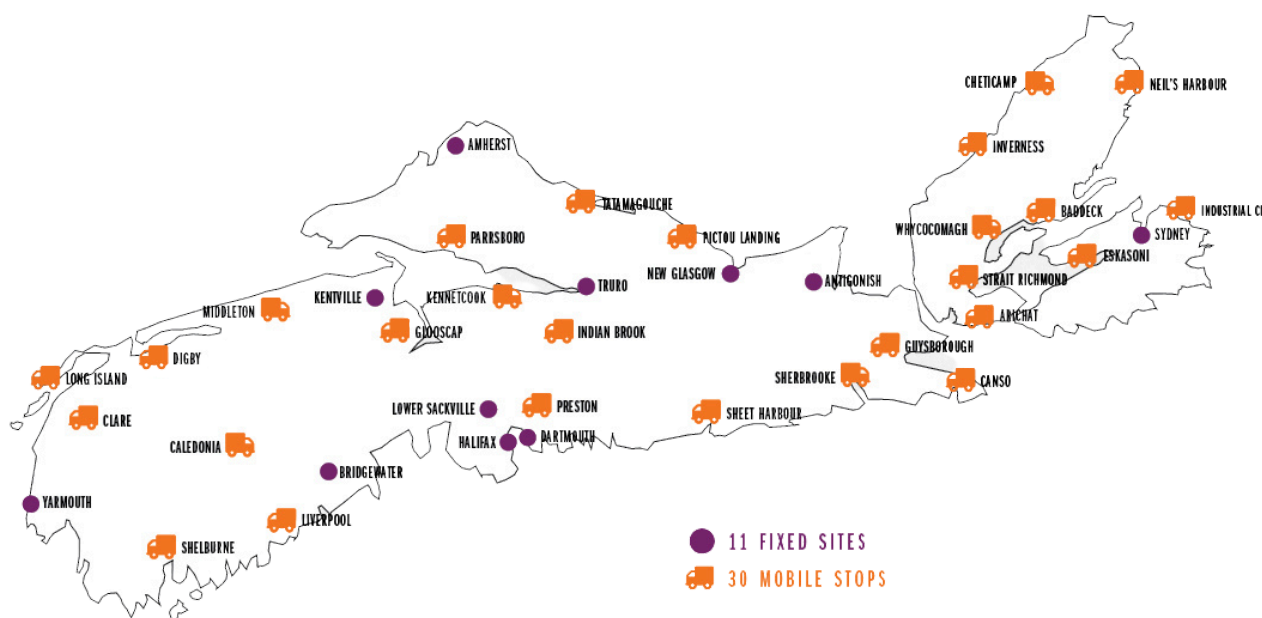
Trena Metcalfe
Program Manager
Nova Scotia Breast Screening Program

Plan Ahead. Get Screened.

Regular breast cancer screening can find cancer when it is smaller, easier to treat, and there are more treatment options.

Screening regularly is important to allow the radiologist to look for change - early detection is key. Any concerns about a change in the breasts should be investigated by a health care provider.

Eligible women, transgender, gender diverse and non-binary people aged 40 and older can call the Breast Screening Program to book a screening mammogram at any site in Nova Scotia.



VISION

To enhance the quality of life through the early detection of breast cancer.

MISSION STATEMENT

To improve the breast health among the people of Nova Scotia through high quality, accountable and seamless breast imaging and diagnosis ensuring continuity of patient care.

Patient Navigator

A PATIENT NAVIGATOR OFFERS INDIVIDUALS AND PRIMARY CARE PROVIDERS STEP-BY-STEP INFORMATION AND SUPPORT

Call (902)-471-1411 or toll free at 1-800-565-0548 to speak with the Patient Navigator. Individuals and health care providers may have questions about screening and what might come next - don't hesitate to give the Patient Navigator a call if you have a question.



New Website Highlights

The Nova Scotia Breast Screening Program website (**nsbreastscreening.ca**) provides clear, comprehensive and accessible information to support individuals in accessing screening services. The site outlines eligibility criteria—including a self-referral questionnaire—and describes what to expect during a screening mammogram, along with booking options such as the provincial toll-free number. It also provides hours and addresses for fixed screening sites and an updated schedule for the provincial mobile screening unit, enabling users to identify screening options within their communities.

In addition to service information, the website includes educational content on breast cancer risk factors, common signs and symptoms, breast density, and the benefits and limitations of screening. Users can also learn about high-risk screening pathways and eligibility. The site also links wait time information for screening and diagnostic mammography and breast biopsy services across multiple facilities.

For patients and health care providers who may be looking for information regarding a recent breast cancer diagnosis, the website is a reliable source of information. There are links to books provided from the Canadian Cancer Society and the Canadian Breast Cancer Network. The resource material provides information on the various stages through the health care system from the time a patient is diagnosed through to treatment.

The website further serves as a central source for program updates, recent news articles, and educational spotlights that support informed decision-making and encourage participation in breast screening. These include topics such as the annual release of the mobile schedule and public education on the importance of breast cancer screening.

Program Updates

NSBSP Quick Reference Card

The Nova Scotia Breast Screening Program’s Quick Reference Card provides healthcare providers with a concise overview of the province’s breast screening pathways, including eligibility criteria for average, increased, and high-risk screening.

Its purpose is to support consistent, accurate referrals and ensure individuals are directed to the correct screening or diagnostic pathway.

It outlines when individuals can self-refer, when primary care referral is required, and the appropriate pathways for symptomatic patients, breast cancer survivors, and those with breast implants.

The card also summarizes screening intervals, definitions of eligible populations—including gender-diverse individuals—and key breast symptoms that warrant diagnostic breast imaging.

Quick reference card

AVERAGE Risk Screening

- Individual† with no personal history of breast cancer AND;
- No breast implants AND;
- No breast symptoms* AND;
- Age 40 - 74

No family history of breast cancer

***Breast symptoms for breast imaging referral**

- A new lump in the breast or a thickening or hardening of the skin
- A change in the look or feel of the skin, such as puckering or dimpling, redness, thickening and pitting like the skin of an orange
- Bloody or clear fluid leaking from the nipple
- A change in the size, shape, or appearance of the breast, or change in nipple position such as the nipple being pulled in or pointed differently
- Peeling, scaling, crusting, or flaking of the area around the nipple

INCREASED Risk Screening

- Individual† with no personal history of breast cancer AND;
- No breast implants AND;
- No breast symptoms* AND;
- Age 40 - 74

Family history of first degree relative (i.e., mother, father, sister, brother, daughter, son) OR;

Category D breast density OR;

History of high-risk lesion (i.e., ADH or LCIS)

†Eligible individuals include:

- Cisgender women, Transgender, Gender Diverse, and Non-Binary people refer to those who are:
 - Assigned female at birth and have not undergone gender-affirming chest surgery (commonly referred to as Top surgery) OR;
 - Assigned male at birth and have been on feminizing hormone therapy for 5 or more years

HIGH Risk Screening

- No breast symptoms* AND;
- Age 30 - 74 (after 69, mammo only)

Known genetic mutation associated with high lifetime risk of breast cancer (i.e., BRCA1, BRCA2, Cowden's syndrome) OR;

Has declined genetic testing and is a first degree relative of a known mutation carrier (e.g., BRCA1, BRCA2) OR;

High lifetime risk (>25%) of breast cancer, established and documented by a standard breast cancer risk assessment model (e.g., including, but not limited to, CanRisk, IBIS) OR;

History of chest radiation as cancer treatment before age 30. Screening is not indicated until 8 years after the end of radiotherapy or age 30, whichever date is later

Screening over 75

- Screening over the age of 75 is a personal decision based on informed discussions with a healthcare provider.
- Key factors to consider:
 - Overall health and life expectancy:** Screening is most beneficial for those who are in good health and have a reasonable life expectancy of 7 to 10 years
 - Comorbidities:** Other significant health conditions may reduce the potential benefit of screening, as these conditions may limit life expectancy or complicate treatment options
 - Risks and benefits:** As age increases, the potential benefit of detecting cancer early may decline. Risks may also become more significant, e.g., false positives, overdiagnosis, and overtreatment

Screening Interval

- Average Risk: Annual (40-49y); Biennial (50-74y)
- Increased/High Risk - Annual



October 2025

AVERAGE and INCREASED Risk Screening

Self-referral

- Individual† calls 902-473-3960 or 1-800-565-0548 and books their own appointment

Normal or abnormal screening mammogram completed and report sent to individual and their PCP

Normal

- Next screen reminder sent by NSBSP

Abnormal

- Appointment for additional breast imaging sent to individual and PCP

HIGH Risk Screening

Primary Care Provider (PCP) referral

- PCP makes referral for first screen
- NSBSP confirms high risk eligibility
- NSBSP manages subsequent screening

Meets high risk eligibility criteria?

Yes

- NSBSP coordinates subsequent high risk screening

Yes, but contraindication for MRI

- 40+: Screening Mammogram
- 39 and younger: Diagnostic mammogram

No

- Cover letter sent to PCP explaining ineligibility
- Patient enters average risk pathway

Normal

- NSBSP coordinates subsequent high risk screening

Abnormal

- Appointment for additional breast imaging sent to PCP

Normal mammogram

- 40+: Reminder sent to patient for future booking
- 39 and younger: PCP sends requisition for annual mammogram

BREAST IMAGING REFERRAL

Diagnostic mammogram

- Symptomatic at any age OR;
- Breast implants (asymptomatic) OR;
- Breast cancer survivor†

Breast imaging requisition

- PCP faxes req. to 902-473-3959 or 1-866-470-3959
- Appointment for additional breast imaging sent to PCP
- Patient notified of appointment

† BREAST CANCER SURVIVOR (Survivor Surveillance)

- Individual† with personal history of breast cancer AND;
 - No symptoms AND;
 - No breast implants AND;
 - No bilateral mastectomy
- PCP referral**
- PCP makes first referral
 - NSBSP manages subsequent surveillance



603L-7001 Mumford Rd, Halifax, NS B3L-2H8
 Phone: 1-800-565-0548 | Fax: 1-866-470-3959 | Email: nsbreastscreening.ca

October 2025

NOVA SCOTIA BREAST SCREENING PROGRAM

2025

2024 Data, Ages 40+

How many patients did we manage?



163,766^{a,b}

APPOINTMENTS BOOKED
BY CENTRAL BOOKING



60,729^b

SCREENING
MAMMOGRAMS

What were the outcomes?



3,714^b

FURTHER
IMAGING



1,522^b

NEEDLE CORE
BIOPSIES



328^b

CANCERS

What did we do?



REPORT ON
QUALITY



DEVELOP
PROVINCIAL
STANDARDS



COLLABORATION
WITH COMMUNITY
PARTNERS

Patient experience improvements



YourHealthNS

APPOINTMENT
REMINDERS and RESULTS
NOTIFICATION

How are we doing?

42.5% (2023) 43.0% (2024)



PARTICIPATION
RATES

NATIONAL TARGET: ≥ 70%

71.5% (2021) 70.5% (2022)



RETENTION
RATES

NATIONAL TARGET: ≥ 90%



NURSE NAVIGATOR for
UNATTACHED PATIENTS

NOTES:

a. Appointments booked by Central Booking include: screening mammograms, diagnostic mammograms, ineligible screens, follow-up mammograms, work-up mammograms, 6-month post-cores, ultrasounds and rebooks.

b. This data is presented for individuals ages 40+ who came to breast screening in 2024.

Annual Statistical Supplement

EXECUTIVE SUMMARY

Key Message 1: Mobile Screening Made a Positive Impact in a Few Communities

- Mobile screening continues to play a very important role in supporting screening participation and retention for individuals living in communities that are located far from fixed screening sites.
- Individuals in Digby and Richmond counties had the highest breast screening participation rates across the province (neither county has a fixed screening site).
- The highest proportion of individuals (both first-time individuals and subsequent-screened individuals) returning to screening within 30 months was recorded for Victoria county, which does not have a fixed screening site.

Key Message 2: More First-Time Individuals are Coming to Breast Screening

- The number of first-time individuals ages 40-74 who came to breast screening in 2022, 2023 and 2024 surpassed pre-COVID levels

Key Message 3: Longer Wait Times Than in Previous Years

- The wait time for breast screening appointments has been increasing since the COVID pandemic due to several factors, with human resources being the most predominant reason.
 - As of the end of 2025, the wait time for a first-time screening mammogram varies across sites, from a low of a few days to a high of 13 months.
 - This also has negative implications for participation rates and retention rates. The current wait times for some Screening Sites prevent participants from booking their Screening appointment within the recommended interval.
- The wait times for breast imaging procedures such as work-ups and core biopsies needed to resolve an abnormal screening mammogram have also increased drastically.
 - As a result, the number of breast cancers detected in 2024 is lower than in previous years because all breast imaging patients are waiting longer for a definitive diagnosis.

CAVEATS IN RESULTS INTERPRETATION

Change in Breast Screening Target Age Group (40-74 years)

- Nova Scotia Breast Screening Program has always accepted individuals in their 40s for self-referral into screening
- In 2018, the Canadian Taskforce on Preventive Health Care (CTFPHC) recommended that the breast screening target age be expanded to 50-74.
- The CTFPHC released draft recommendations in 2024 but have yet to release the final version
- In early 2025, work by the CTFPHC was paused to allow for an external review, and plans are now underway to rebuild and modernize the Task Force to strengthen governance and improve guideline development.
- In recent years, many of the organized breast screening programs across Canada have now expanded their programs to accept individuals ages 40-49 by self-referrals
- In keeping with the expanded CTFPHC target age group, the report uses the 50-74 age group for screen years 2018 – 2021; however, for more recent years (2022-2024), the age group was expanded to 40-74 yrs to enable comparison with other Canadian programs
- Results are also presented for the 50-74 yr age group for this recent time frame to understand how the expanded age group affects the results

Impact of COVID and Increasing Wait Times

- As evident in many jurisdictions, the significant reduction in access to screening during COVID (2020-2021) has led to delays in cancer diagnosis, and in some cases, more advanced disease at diagnosis
- The increasing wait times in breast imaging are also resulting in delays in diagnosis
- Both of these situations make interpretation of the report results challenging as they both can result in a temporary reduction in the number of cancers being diagnosed

HIGHLIGHTS

Screen Volume

- In 2024, 56,956 individuals ages 40-74 came to breast screening.
- Since 2020, the number of individuals ages 40-74 who came to breast screening has been steadily increasing but is now levelling off at a level lower than volumes pre-COVID
- The number of first-time individuals who came to breast screening in 2024 surpassed pre-COVID levels.

Participation Rate

- The 2024 breast screening participation rate for individuals ages 40-74 (43.0%) has increased since 2020 but is now levelling off and continues to be well below the national target of 70%.
- **New:** Analysis of participation rates **by county of residence** revealed a broad range, from a low of 31.1% in Annapolis to a high of 54.1% in Richmond.
- The two counties with participation rates over 50% (Richmond – 54.1%; Digby – 50.7%) demonstrate the importance of mobile service delivery as neither county has a fixed screening site

Retention Rate

- 48.7% of first-time individuals ages 40-72 who were screened in 2022 returned within 30 months; a figure that is relatively stable from last year had the target age group not changed - this remains well below the national target of 75%.
- 70.5% of subsequent-screened individuals ages 40-72 who were screened in 2022 returned within 30 months; a figure that would have declined had the target age group not changed - this remains well below the national target of 90%.
- **New:** Analysis of retention rates **by county of residence** revealed a broad range:
- For first-time screens, the retention rates varied from a low of 38.3% in Annapolis to a high of 63.4% in Victoria
- For subsequent screens, the retention rates varied from a low of 58.7% in Annapolis to a high 82.4% in Richmond
- The two counties with the highest retention rates in both groups (Victoria, Richmond) demonstrate the importance of mobile service delivery as neither county has a fixed screening site

HIGHLIGHTS

Abnormal Screen to Resolution

- Only 23.5% of individuals ages 40-74 with an abnormal screen, who required additional imaging only (no tissue biopsy), received a final diagnosis within 5 weeks. This is well below the national target of 90%.
- Only 24.5% of individuals ages 40-74 with an abnormal screen, who required a tissue biopsy, received a final diagnosis within 7 weeks. This is well below the national target of 90%.
- Both of these wait times have worsened significantly since 2022, highlighting ongoing challenges in timely diagnostic follow-up.

Method of Detection

- In 2024, only 272 cancers were detected by screening among individuals ages 40-74, compared to 306 in 2023.
- It is possible that this decrease is due in part to delays in diagnosis
- In contrast, the number of symptom-initiated breast cancers increased from 132 in 2023 to 155 in 2024.
- Delays in access to screening can result in more advanced disease at diagnosis
- In 2024, 63.7% of all breast cancers in individuals ages 40-74 were detected by breast screening.

A. NSBSP QUALITY INDICATOR FRAMEWORK

NSBSP monitors annual program performance by way of quality indicators¹. These indicators are used nationally to monitor organized breast screening programs across Canada. Quality indicators are grouped into five domains:

1. Coverage
 - a. Participation Rate
 - b. Retention Rate

2. Follow-up
 - a. Abnormal Call Rate
 - b. Diagnostic Interval

3. Quality of screening
 - a. Benign to Malignant Core Biopsy Ratio
 - b. Benign to Malignant Open Biopsy Ratio
 - c. Positive Predictive Value (PPV)

4. Detection
 - a. In situ cancer detection rate
 - b. Invasive cancer detection rate
 - c. Method of detection²

5. Disease extent at diagnosis
 - a. Screen-detected invasive cancer tumour size
 - b. Proportion of screen-detected invasive cancers that are node negative

Time trends are presented for these quality indicators for individuals ages 40-74 (2018-2024), followed by quality indicators for each site separately (2024).

¹ Canadian Partnership Against Cancer. *Breast Cancer Screening in Canada: Monitoring and Evaluation of quality Indicators - Results Report, January 2011 to December 2012*. Toronto: Canadian Partnership Against Cancer; 2016.

² In 2024, NSBSP added one more indicator – Method of Detection – to this Framework. This indicator looks at the contribution of breast screening in the overall detection of breast cancers. Breast cancers can be detected in two ways:

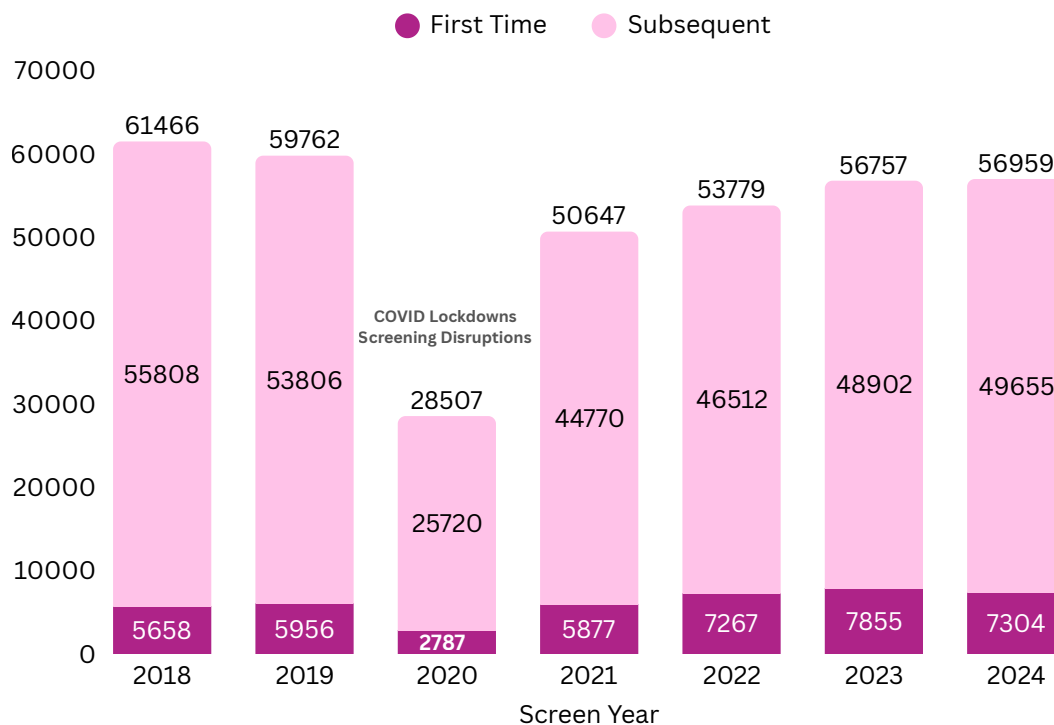
- By breast screening (patients did not have any breast symptoms, but abnormality was reported for the screening mammogram), or
- By “Direct-to-diagnostic” imaging. These patients presented with breast symptoms and did not receive screening mammograms. Instead, they received diagnostic mammograms.

B. TIME TREND - SCREEN VOLUME (2018-2024)

1] Screen Volume, Target Age 40-74

Results (Figure 1):

Figure 1: Time Trends in Number of Individuals Ages 40-74 who came to Breast Screening - First vs Subsequent Screens, 2018-2024

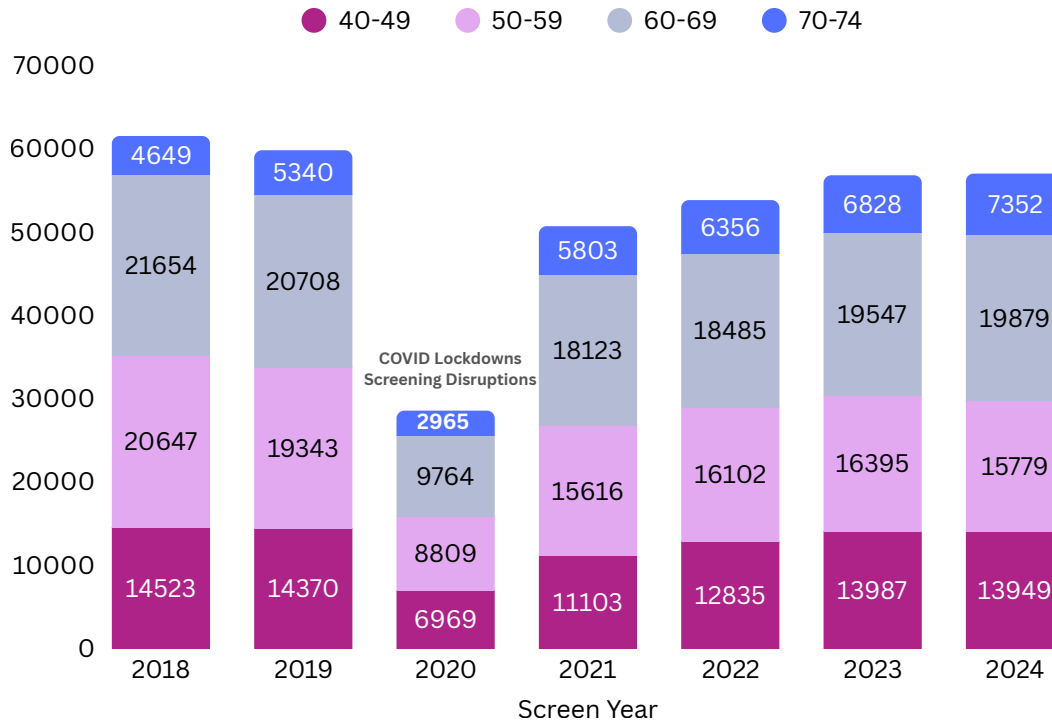


- This year (2024), 56,956 individuals ages 40-74 came to breast screening.
 - The number of first-time individuals ages 40-74 who came to breast screening in 2024 surpassed pre-COVID levels.
- Over time (2020 – 2024), the number of individuals ages 40-74 who came to breast screening has been steadily increasing but is now levelling off at a level lower than volumes pre-COVID

2] Screen Volume by Age Group

Results (Figure 2a):

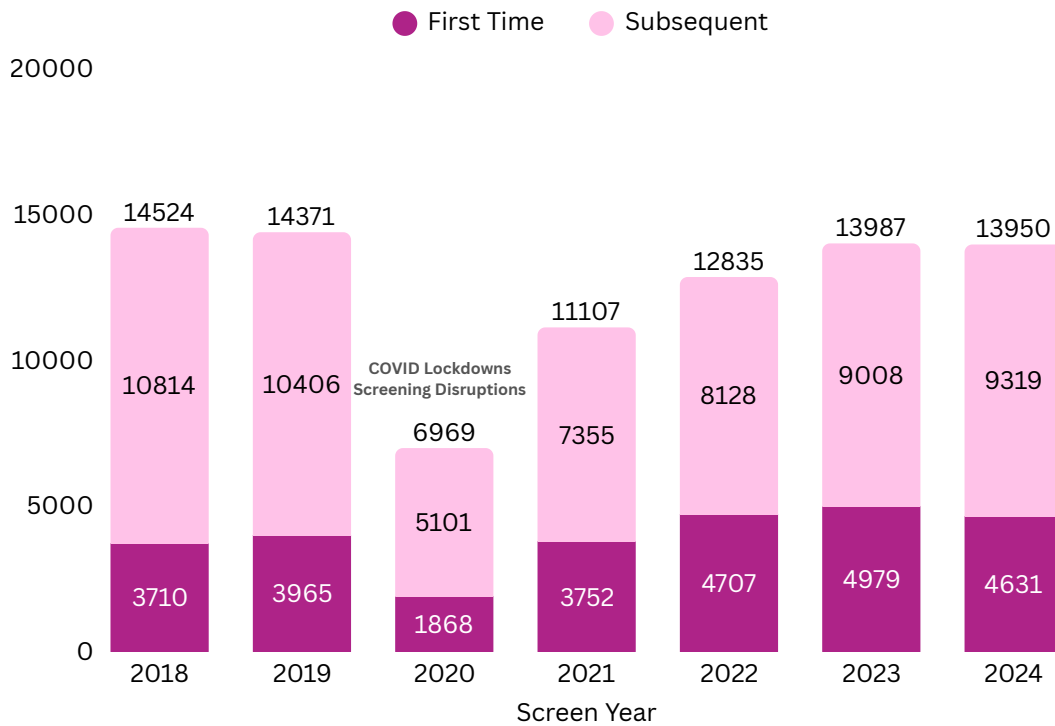
Figure 2a: Time Trends in Number of Individuals (ages 40-49, 50-59, 60-69, 70-74) who came to Breast Screening, 2018-2024



- This year (2024), 13,949 individuals ages 40-49, 15,779 individuals ages 50-59, 19,879 individuals ages 60-69 and 7,352 individuals ages 70-74 came to breast screening.
- Over time (2020-2024), the number of individuals in each age group (except for ages 70-74) who came to breast screening has been steadily increasing, but is now levelling off at a level lower than volumes pre-COVID
 - The volume of individuals ages 70-74 who came to breast screening post-COVID has been increasing and is higher than pre-COVID volumes.
 - This may be explained by extending the Screening age from 69-74 and sending reminders to book for this age group.

Results (Figure 2b):

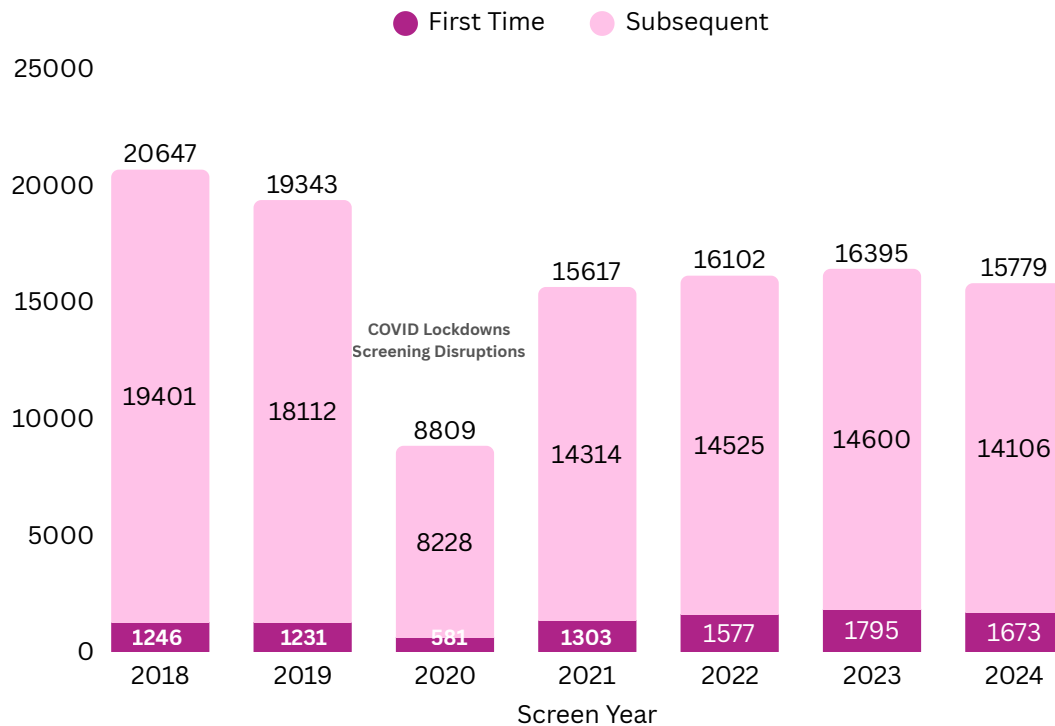
Figure 2b: Time Trends in Number of Individuals Ages 40-49 who came to Breast Screening - First vs Subsequent Screens, 2018-2024



- This year (2024), 13,950 individuals ages 40-49 came to breast screening.
 - 4,631 were first-time individuals and 9,319 were subsequent-screened individuals (i.e. individuals with at least one prior screening mammogram)
- Over time (2020-2024), the number of individuals who came to breast screening has been steadily increasing, but is now levelling off at a level higher than volumes pre-COVID
 - The number of first-time individuals ages 40-49 who came to breast screening in 2024 surpassed pre-COVID levels.

Results (Figure 2c):

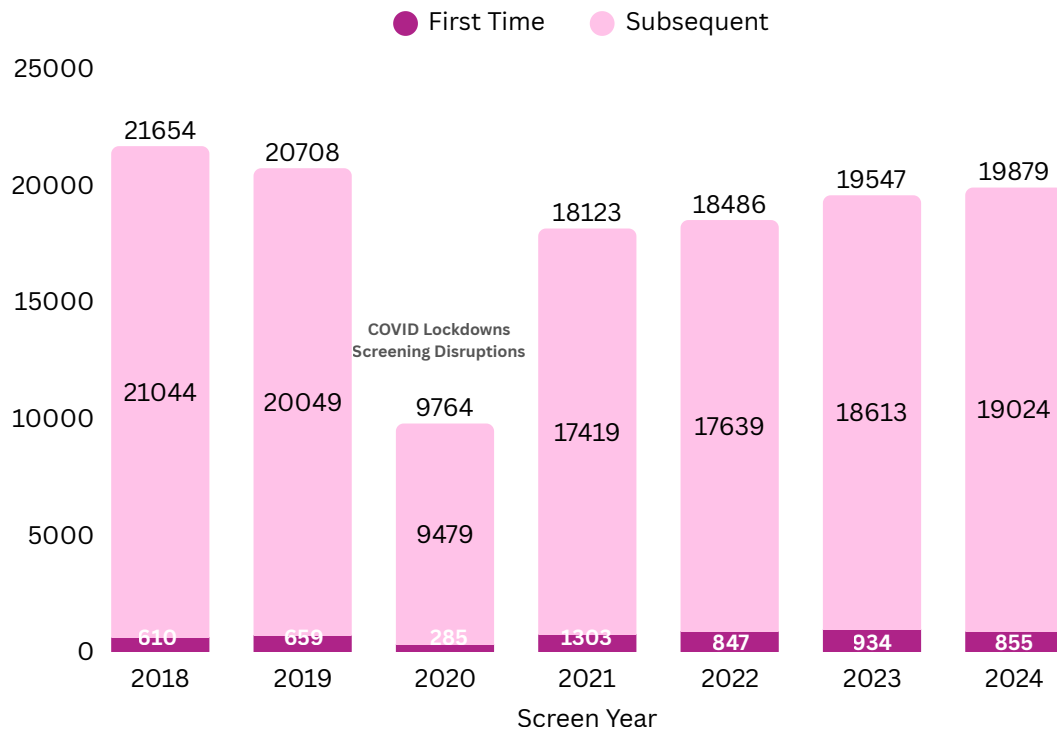
Figure 2c: Time Trends in Number of Individuals Ages 50-59 who came to Breast Screening - First vs Subsequent Screens, 2018-2024



- This year (2024), 15,779 individuals ages 50-59 came to breast screening.
 - 1,673 were first-time individuals and 14,106 were subsequent-screened individuals (i.e. individuals with at least one prior screening mammogram)
- Over time (2021-2024), the number of individuals ages 50-59 who came to breast screening has been relatively stable and remains at a level lower than volumes pre-COVID
 - The number of first-time individuals ages 50-59 who came to breast screening in 2024 surpassed pre-COVID levels.

Results (Figure 2d):

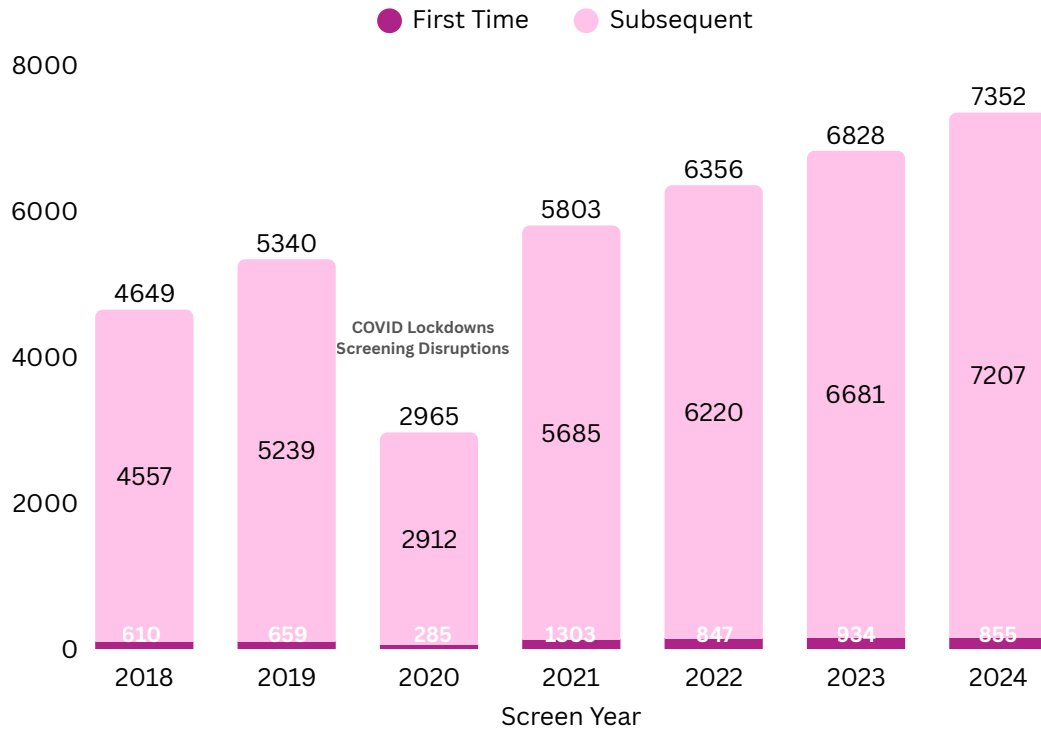
Figure 2d: Time Trends in Number of Individuals Ages 60-69 who came to Breast Screening - First vs Subsequent Screens, 2018-2024



- This year (2024), 19,879 individuals ages 60-69 came to breast screening.
 - 855 were first-time individuals and 19,024 were subsequent-screened individuals (i.e. individuals with at least one prior screening mammogram)
- Over time (2020-2024), the number of individuals who came to breast screening has been steadily increasing, but is now levelling off at a level lower than volumes pre-COVID
 - The number of first-time individuals ages 60-69 who came to breast screening in 2024 surpassed pre-COVID levels.

Results (Figure 2e):

Figure 2d: Time Trends in Number of Individuals Ages 70-74 who came to Breast Screening - First vs Subsequent Screens, 2018-2024



- This year (2024), 7,352 individuals ages 70-74 came to breast screening.
 - 145 were first-time individuals and 7,207 were subsequent-screened individuals (i.e. individuals with at least one prior screening mammogram)
- Over time (2020-2024), the total number of individuals ages 70-74 who came to breast screening has been increasing and the volume is higher than pre-COVID.
 - The number of first-time individuals ages 70-74 who came to breast screening in 2024 surpassed pre-COVID levels.

C. TIME TRENDS - QUALITY INDICATORS (2018-2024)

1] Participation Rate (Domain 1: Coverage)

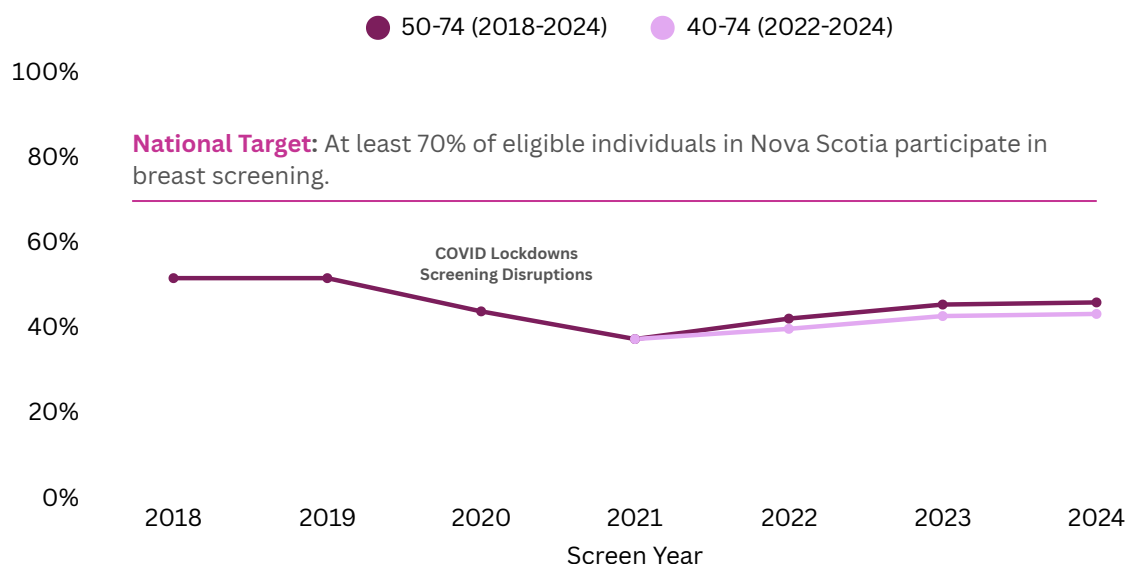
Definition: The percentage of individuals who have a screening mammogram during a 30-month period ending December 31, as a proportion of the target population

Note: The participation rate is calculated for individuals who came to screening during the 30-month period ending December 31 of each year from 2018-2024.

National Target: $\geq 70\%$ of the eligible population participate in breast screening

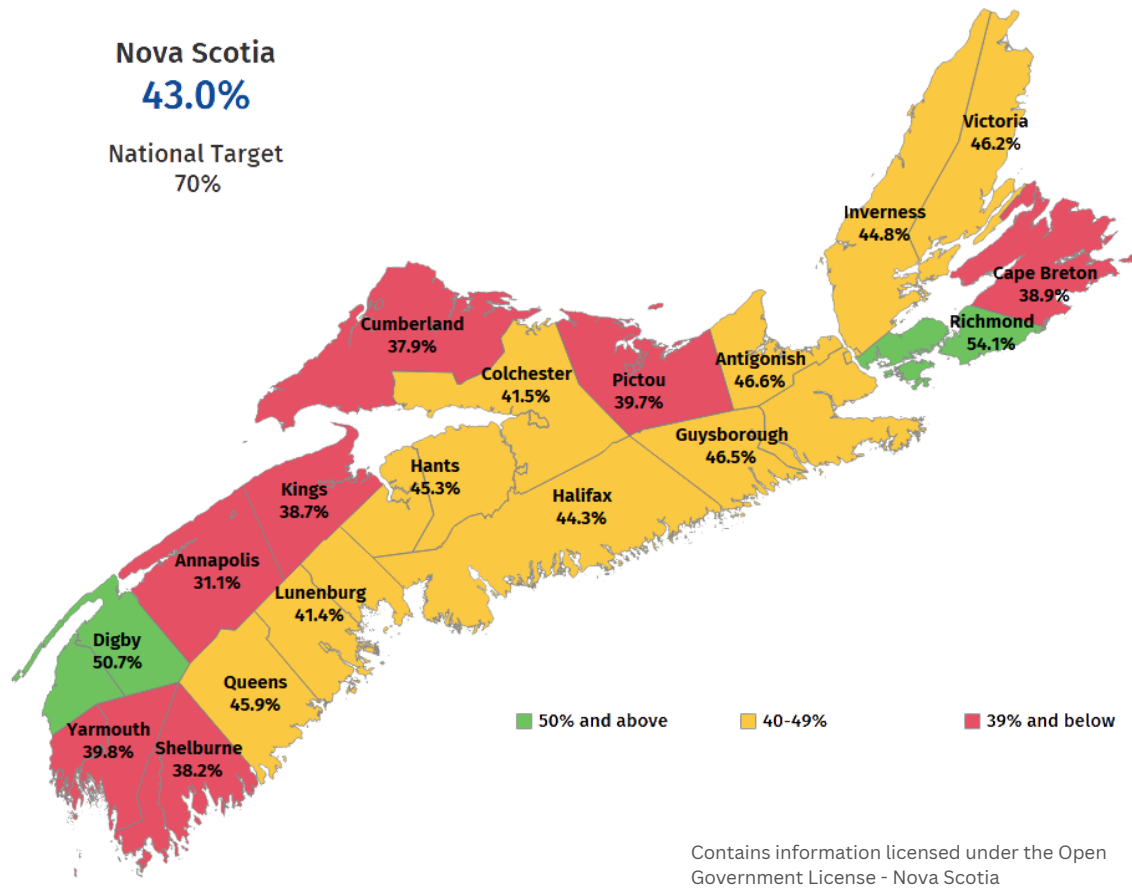
Results (Figure 3):

Figure 3: Time trends in the proportion of eligible individuals who participated in breast screening for the 30-month period ending December 31, 2018-2024.



- This year (2024), 43% of eligible Nova Scotia individuals ages 40-74 participated in breast screening. It is well below the national target of 70%.
- Over time (2020-2024), the breast screening participation rate has been slowly increasing but remains below pre-COVID levels.

Figure 4: Participation rate by county, 2024



- The proportion of Nova Scotia individuals (ages 40-74) who participated in breast screening varied widely across the province
- Analysis of participation rates by county of residence revealed a broad range, from a low of 31.1% in Annapolis to a high of 54.1% in Richmond
- The two counties with participation rates over 50% (Richmond – 54.1%; Digby – 50.7%) demonstrate the importance of mobile service delivery as neither county has a fixed screening site

2] Retention Rate (Domain 1: Coverage)

Definition: The percentage of individuals who returned for screening within 30 months of their previous screen. It is calculated separately for initial screens (first-time individuals) and for subsequent screens (individuals with at least one prior screening mammogram).

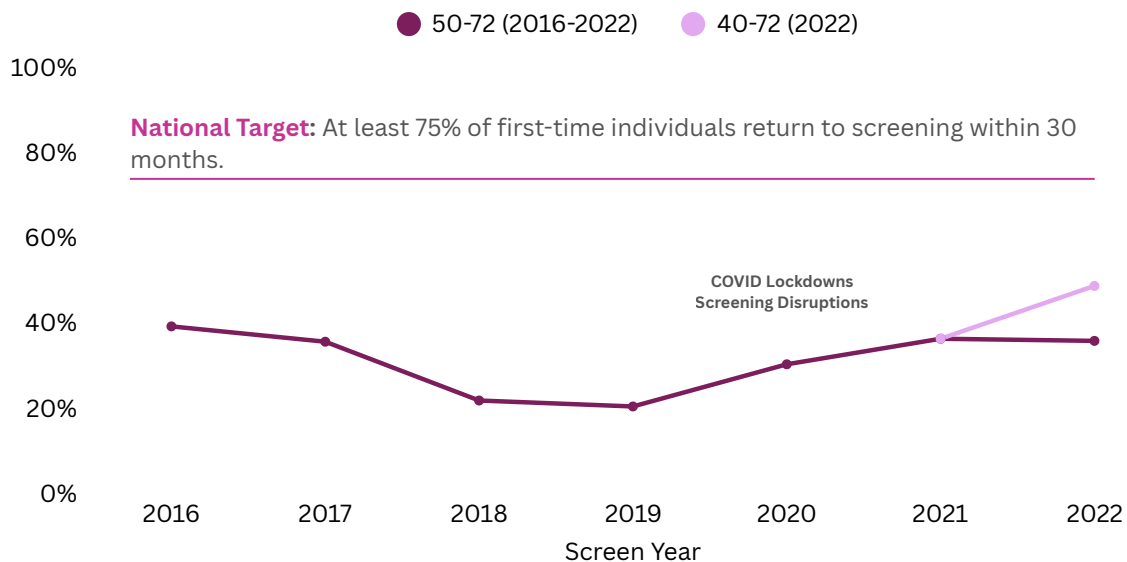
Note: The retention rate is calculated for individuals ages 40-72 who came to screening in each year from 2016-2022 and returned within 30 months.

National Target:

- $\geq 75\%$ of initial screens return to screening within 30 months
- $\geq 90\%$ of subsequent screens return to screening within 30 months

Results: Initial Screens (Figure 5a)

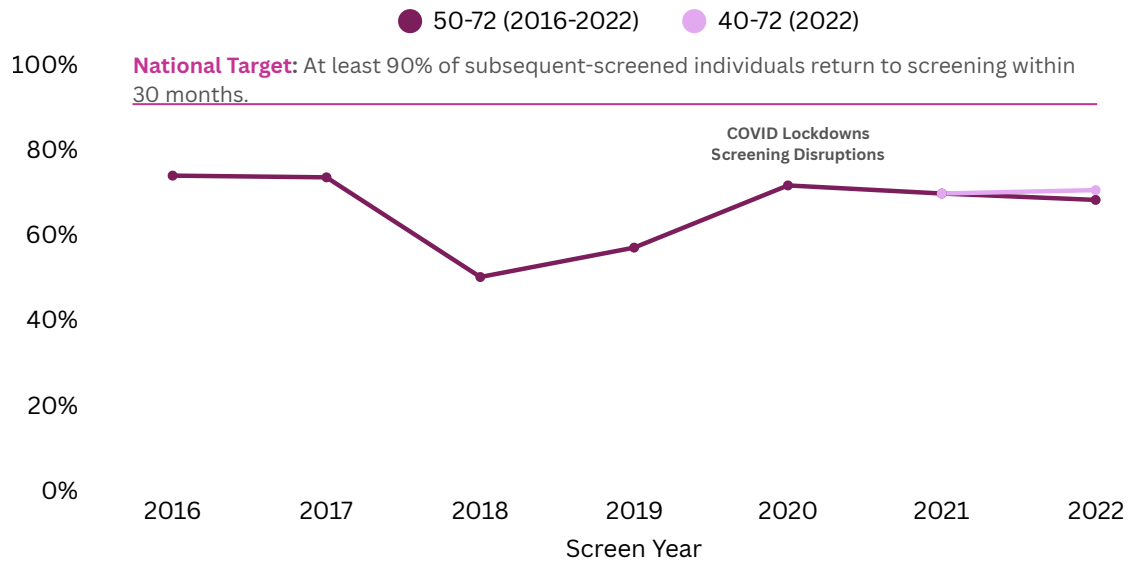
Figure 5a: Time trend in proportion of first-time individuals who were screened from 2016-202, and returned to screening within 30 months



- Screen Year (2022): 48.7% of individuals ages 40-72 who received their first mammogram in 2022 returned to screen within 30 months. It is well below the national target of 75%.
- Over time (2018-2022): the proportion of first-time individuals who returned to screening has been slowly increasing but would now have levelled off had the target age group not changed
 - The apparent increase in return to screening among first-time individuals was driven by those ages 40-49

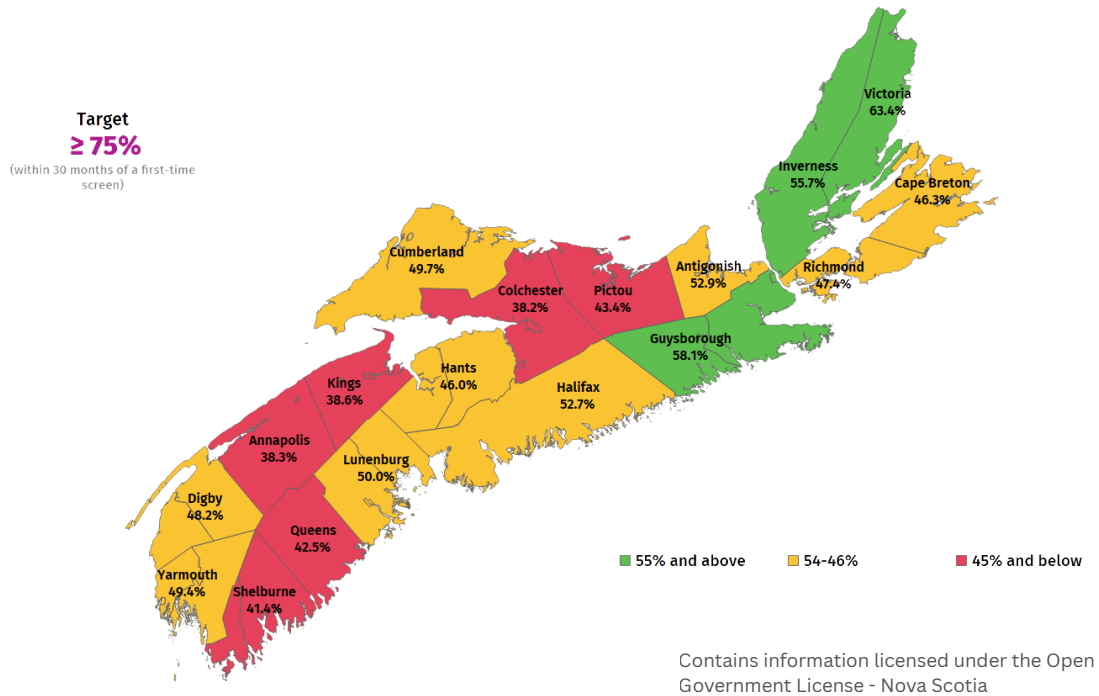
Results: Subsequent Screens (Figure 5b)

Figure 5b: Time trend in proportion of individuals with at least one prior screening mammogram who were screened from 2016-2022, and returned to screening within 30 months



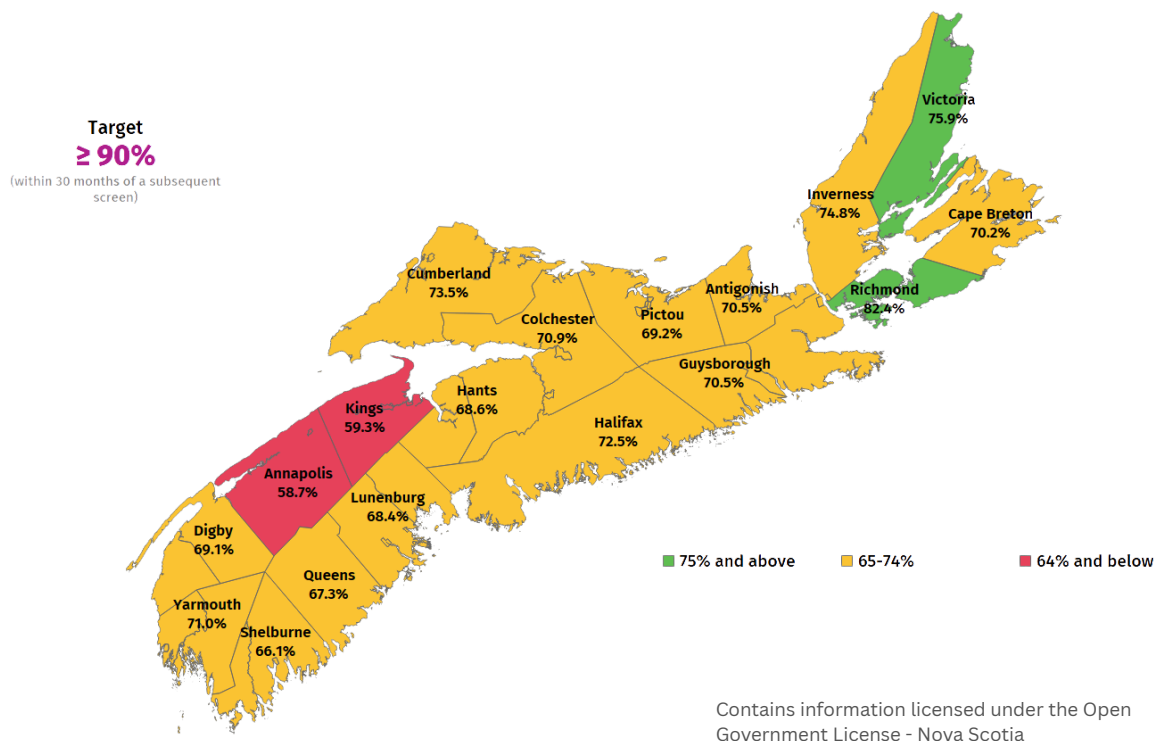
- Screen Year (2022): Among individuals ages 40-72 who came to screening in 2022 and who had at least one prior mammogram, 70.5% returned to screen within 30 months. It remains below the national target of 90%.
- Over time (2018-2022): Since 2020, the proportion of subsequent-screened individuals who returned to screening within 30 months has remained stable for those ages 40-72 but is on a declining trend had the target age group not changed.

Figure 5c: Return to screening rates by county for individuals ages 40-72 in 2022 (without prior screening)



- The proportion of first-time individuals who were screened in 2022 and returned to screening within 30 months varied widely across the province.
- Analysis of first-time retention rates by county of residence revealed a broad range, from a low of 38.2% in Colchester and a high of 63.4% in Victoria
- The three counties with retention rates over 55% demonstrate the importance of Mobile service delivery as they don't have fixed screening sites.

Figure 5d: Return to screening rates by county for individuals ages 40-72 in 2022 (with prior screening)



- The proportion of individuals with prior screening who were screened in 2022 and returned to screening within 30 months varied widely across the province.
- Analysis of return to screening rates among subsequent-screened individuals by county of residence revealed a broad range, from a low of 58.7% in Annapolis and a high of 82.4% in Richmond
- The two counties with retention rates over 75% demonstrate the importance of Mobile service delivery as they don't have fixed screening sites.

3] Abnormal Call Rate (Domain 2: Follow-up)

Definition: The percentage of screening mammograms that are reported as abnormal. It is calculated separately for initial screens (first-time individuals) and for subsequent screens (individuals who had at least one prior screening mammogram).

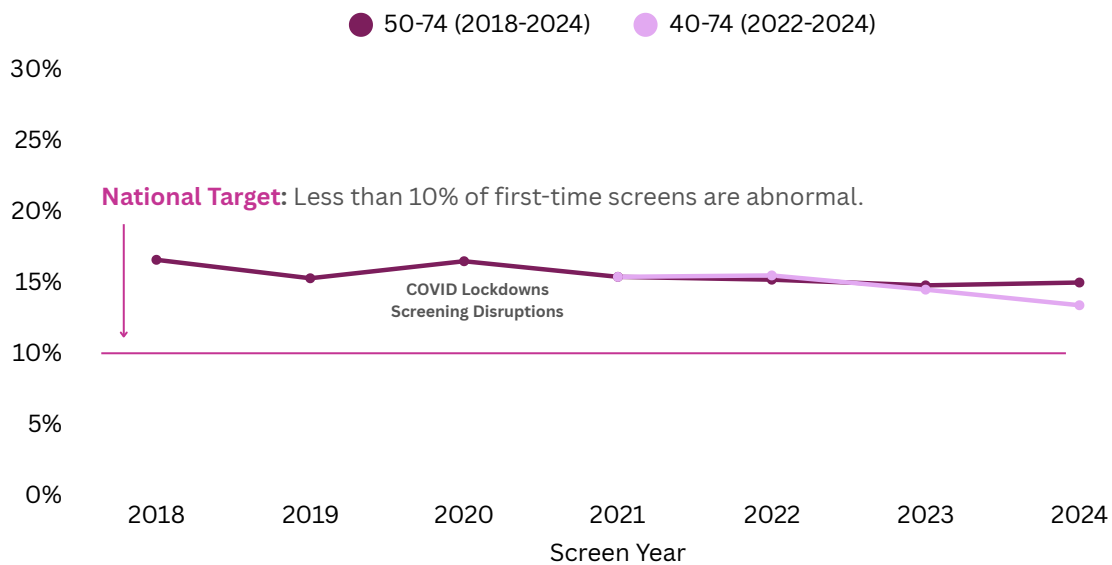
Note: The abnormal call rate is calculated for individuals ages 40-74 who came to screening in 2022, 2023 and 2024.

National Target:

- < 10% of initial screens are abnormal
- < 5% of subsequent screens are abnormal

Results: Initial Screens (Figure 6a)

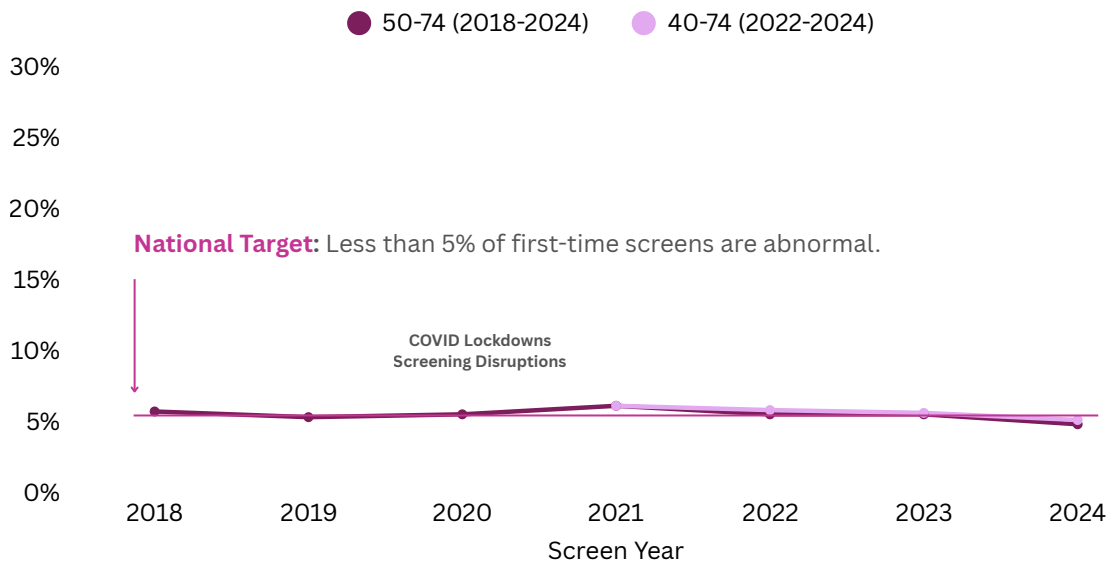
Figure 6a: Time trends in the proportion of first-time screening mammograms that were reported as abnormal, 2018-2024



- This year (2024), 13.3% of first-time screening mammograms were reported as abnormal.
- Over time (2020-2024), the proportion of abnormal first-time screening mammograms has appeared relatively stable, had the target age group not changed

Results: Subsequent Screens (Figure 6b)

Figure 6b: Time trend in the proportion of subsequent-screened mammograms that were reported as abnormal, 2018–2024



- This year (2024), 5.1% of subsequent-screened mammograms were reported as abnormal.
- Over time (2020-2024), the proportion of subsequent-screened mammograms that were reported as abnormal has been relatively stable.

4] Diagnostic Interval (Domain 2: Follow-up)

Definition: The time from abnormal screen to definitive diagnosis. It is calculated separately for a) when tissue biopsy is not needed to reach definitive diagnosis, b) when tissue biopsy is needed to reach definitive diagnosis.

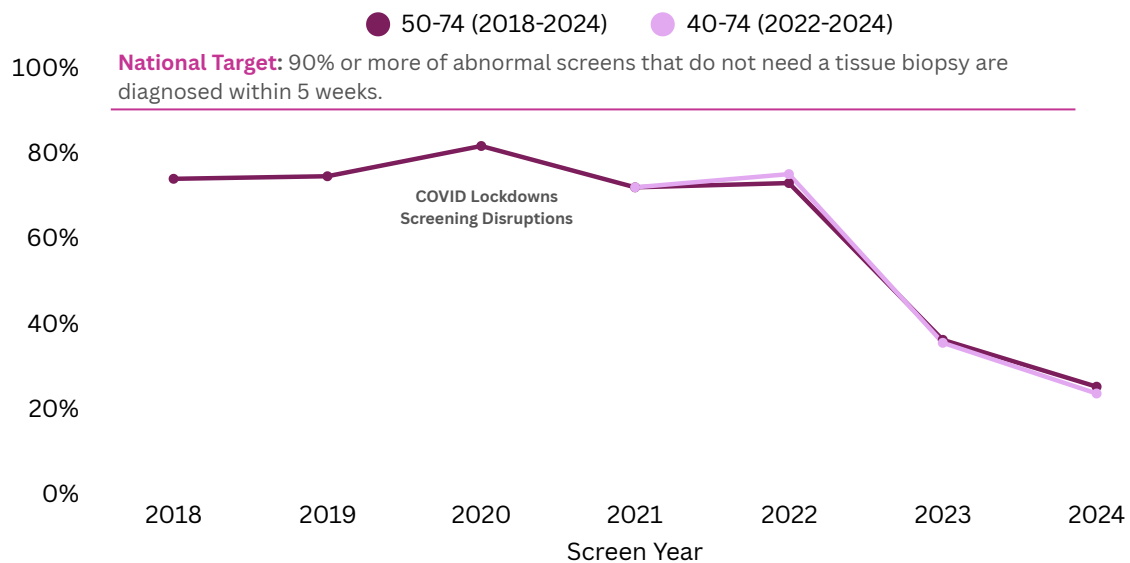
Note: The diagnostic interval is calculated for individuals ages 40-74 who came to screening in 2022, 2023 and 2024.

National Target:

- $\geq 90\%$ of abnormal screens receive final diagnosis within five weeks if no tissue biopsy is performed (only additional imaging is needed)
- $\geq 90\%$ of abnormal screens receive final diagnosis within seven weeks if tissue biopsy is performed

Results: No Tissue Biopsy (Figure 7a)

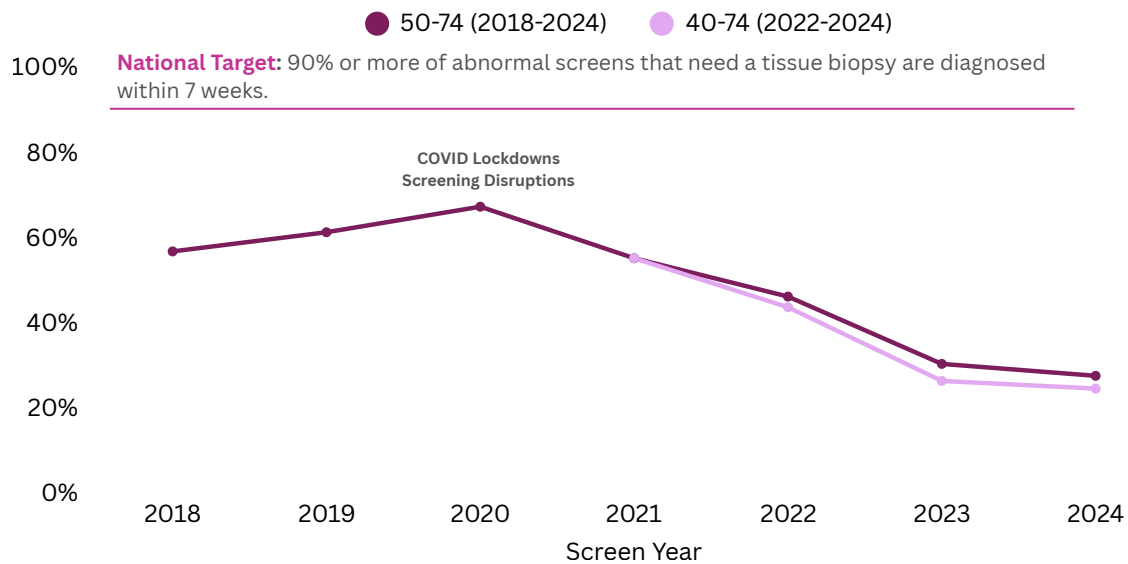
Figure 7a: Time trend in the proportion of abnormal screens that did not require a tissue biopsy to reach a definitive diagnosis, 2018–2024



- This year (2024), only 23.5% of individuals ages 40-74 who did not need a tissue biopsy received their diagnosis within 5 weeks. This is well below the national target.
- Over time (2020-2024), the proportion of individuals not needing a tissue biopsy to receive a diagnosis within 5 weeks has drastically decreased.

Results: Tissue Biopsy (Figure 7b)

Figure 7b: Time trend in the proportion of abnormal screens that needed tissue biopsy to reach a definitive diagnosis, 2018–2024



- This year (2024), only 24.5% of individuals ages 40-74 who needed a tissue biopsy received their diagnosis within 7 weeks. This is well below the national target.
- Over time (2020-2024), the proportion of individuals needing a tissue biopsy to receive a diagnosis within 7 weeks has drastically decreased.
 - By including ages 40-49 in the analysis for screen years 2022, 2023 and 2024 (pink line in Figure 7b), it slightly lowered the proportion of abnormal screens that were able to receive a diagnosis within 7 weeks

5] Benign to Malignant Core Biopsy Ratio (Domain 3: Quality of screening)

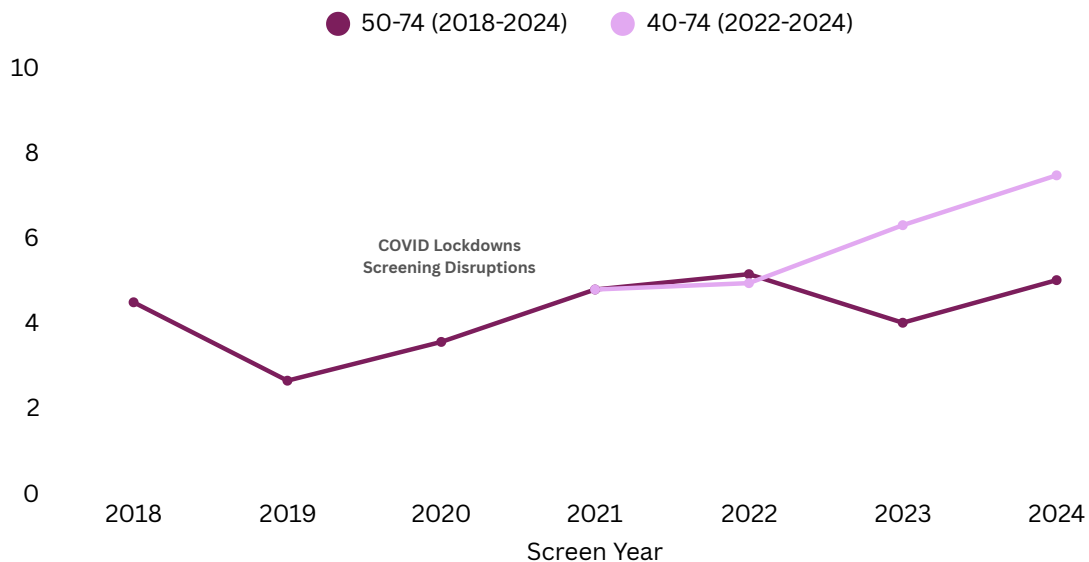
Definition: Among core biopsies, the ratio of benign cases to malignant cancer cases. It is calculated separately for initial screens (first-time individuals) and for subsequent screens (individuals who had at least one prior screening mammogram).

Note: The benign to malignant core biopsy ratio is calculated for individuals ages 40-74 who came to screening in 2022, 2023 and 2024.

National Target: None. Surveillance and monitoring purposes only.

Results: Initial Screens (Figure 8a)

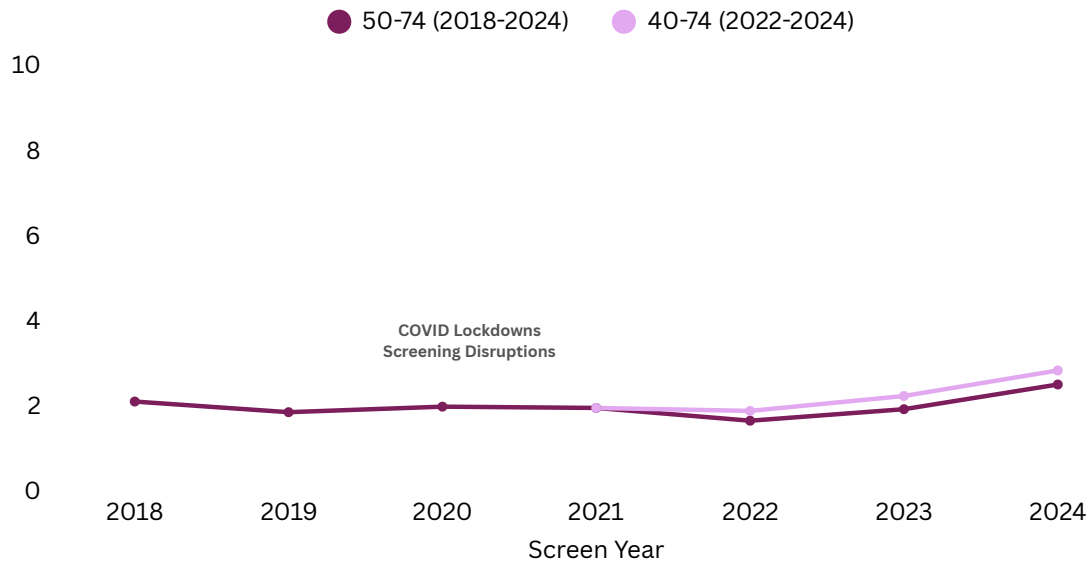
Figure 8a: Time trend in the ratio of benign to malignant findings among first-time individuals who required core biopsies, 2018–2024



- This year (2024), among first-time individuals ages 40-74 who required core biopsies, there were 7.46 benign findings for every one malignant finding.
- Over time (2020-2024), among first-time individuals, the benign to malignant core biopsy ratio has been increasing.
 - This is due to an increase in the proportion of benign findings and corresponding decrease in the proportion of malignant findings.
 - Between 2023 and 2024, the number of core biopsies increased, as did the proportion of benign findings.

Results: Subsequent Screens (Figure 8b)

Figure 8b: Time trend in ratio of benign to malignant findings among subsequent-screened individuals who required core biopsies, 2018–2024



- This year (2024), among subsequent-screened individuals ages 40-74 who required core biopsies, there were 2.83 benign findings for every one malignant finding.
- Over time (2020-2024), among subsequent-screened individuals, an upward trend was observed in the benign to malignant core biopsy ratio starting in 2022.
 - This is due to an increase in the proportion of benign findings and corresponding decrease in the proportion of malignant findings.

6] Benign to Malignant Open Biopsy Ratio (Domain 3: Quality of screening)

Definition: Among open surgical biopsies, the ratio of benign cases to malignant cancer cases. It is calculated separately for initial screens (first-time individuals) and for subsequent screens (individuals who had at least one prior screening mammogram).

Note 1: The benign to malignant open biopsy ratio is calculated for individuals ages 40-74 who came to screening in 2022, 2023 and 2024.

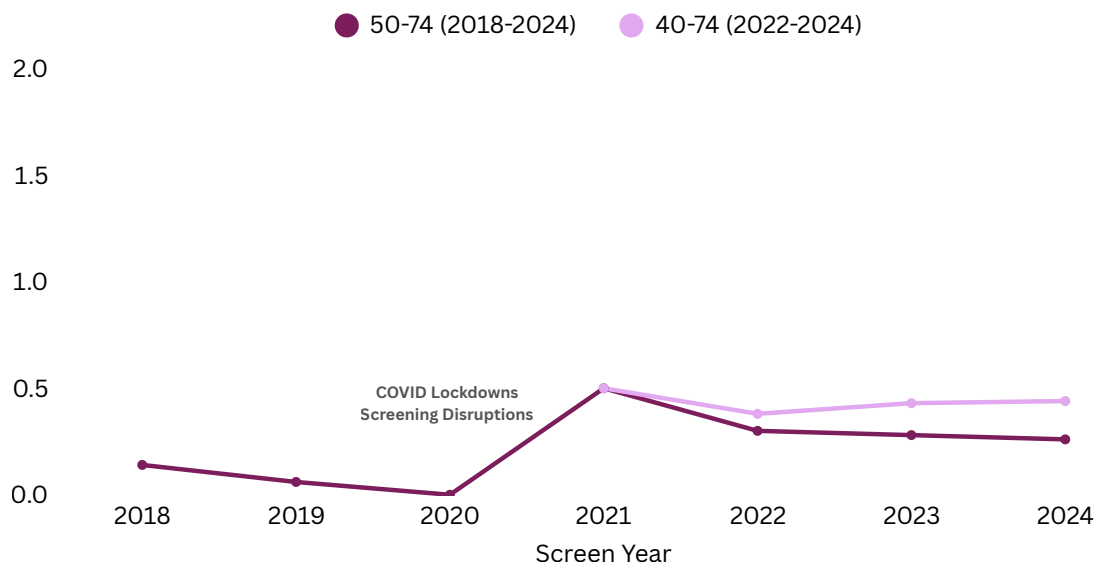
Note 2: The target for this indicator is no longer monitored nationally but continues to be monitored by NSBSP.

Internal Program Target:

- ≤ 1 benign finding to 1 malignant finding among initial screens
- ≤ 1 benign finding to 1 malignant finding among subsequent screens

Results: Initial Screens (Figure 9a)

Figure 9a: Time trend in the ratio of benign to malignant findings among first-time individuals who required open biopsies, 2018–2024

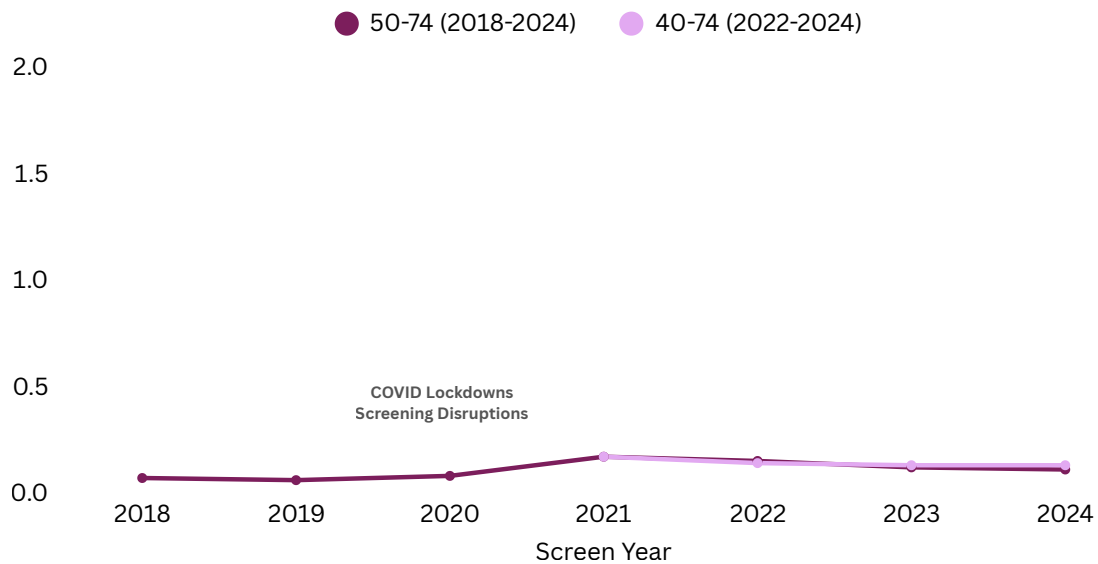


- This year (2024), among first-time individuals ages 40-74 who required open biopsies, there were 0.44 benign findings for every one malignant finding. The internal program target was met.

- Over time (2020-2024), among first-time individuals ages 50-74, the benign to malignant open biopsy ratio started to decrease in 2021.
 - This is due to a decrease in the proportion of open biopsies that were benign.
- Over time (2022-2024), among first-time individuals ages 40-74, the benign to malignant open biopsy ratio remained stable.
 - This is due to the relatively stable proportion of benign findings.

Results: Subsequent Screens (Figure 9b)

Figure 9b: Time trend in ratio of benign to malignant findings among subsequent-screened individuals who required open biopsies, 2018–2024



- This year (2024), among subsequent-screened individuals ages 40-74 who required open biopsies, there were 0.13 benign findings for every one malignant finding. The internal program target was met.
- Over time (2020-2024), the benign to malignant open biopsy ratio was relatively stable
 - This is due to the relatively stable proportion of benign findings.

7] Positive Predictive Value (PPV) (Domain 3: Quality of screening)

Definition: The percentage of abnormal cases diagnosed with breast cancer (invasive or in situ) after diagnostic work-up. It is calculated separately for initial screens (first-time individuals) and for subsequent screens (individuals who had at least one prior screening mammogram).

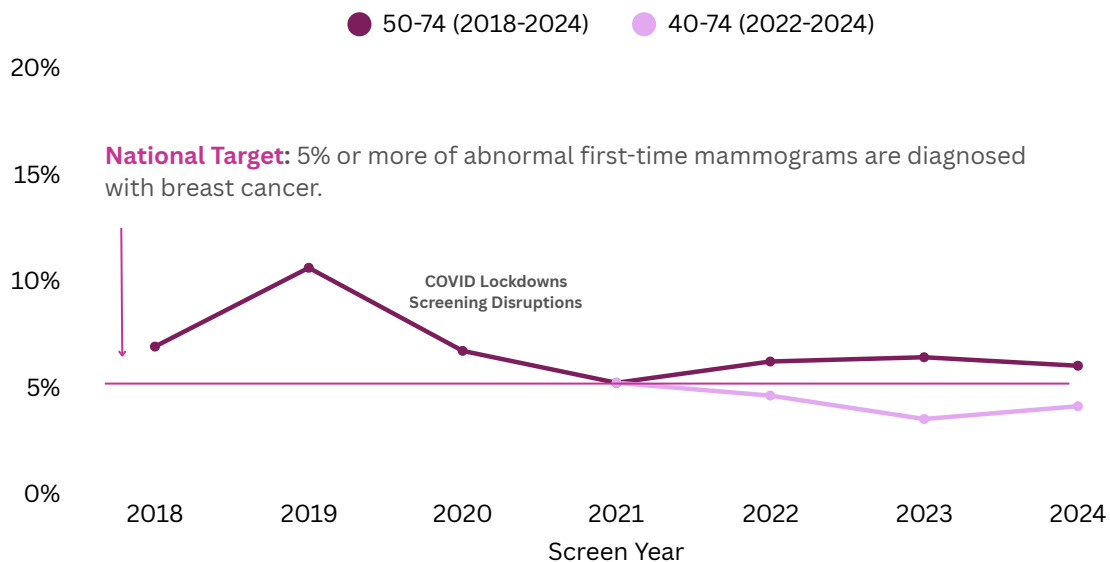
Note: The positive predictive value is calculated for individuals ages 40-74 who came to screening in 2022, 2023 and 2024.

National Target:

- $\geq 5\%$ of abnormal first-time mammograms are diagnosed with breast cancer
- $\geq 6\%$ of abnormal subsequent-screened mammograms are diagnosed with breast cancer

Results: Initial Screens (Figure 10a)

Figure 10a: Time trend in proportion of abnormal first-time mammograms that were diagnosed with breast cancer, 2018-2024

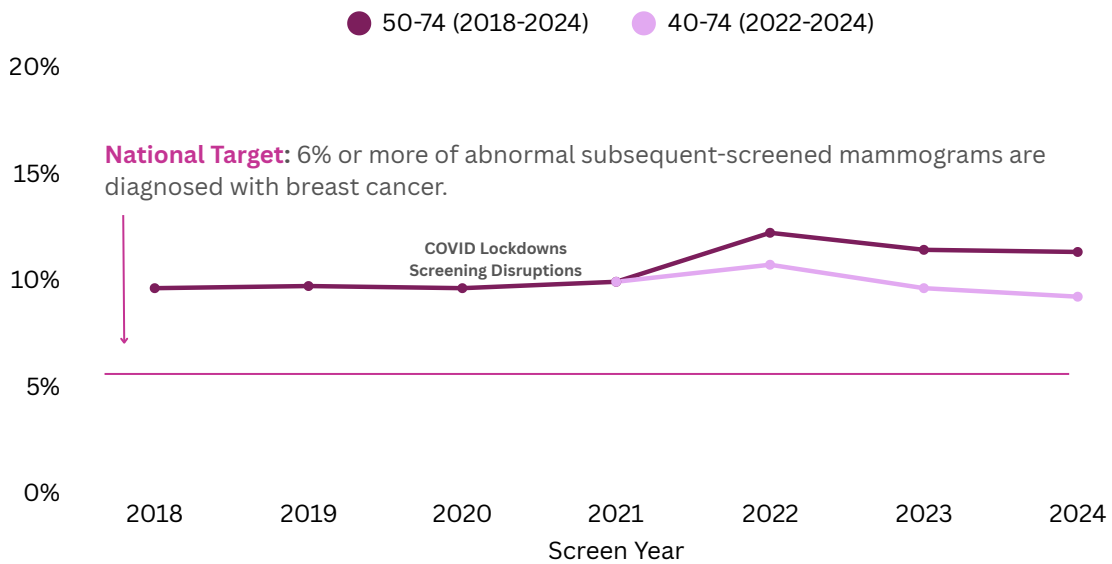


- This year (2024), 4.1% of first-time individuals ages 40-74 with abnormal mammograms were diagnosed with breast cancer.

- Over time (2020-2024), among first-time individuals ages 50-74, the proportion of abnormal mammograms that were diagnosed with breast cancer remained relatively stable and above the national target
- Over time (2022-2024), among first-time individuals ages 40-74, the positive predictive value fell below the national target.
 - This could be due to the addition of ages 40-49 to the analysis. The positive predictive value is the lowest in this age group.

Results: Subsequent Screens (Figure 10b)

Figure 10b: Time trend in proportion of abnormal subsequent-screened mammograms that were diagnosed with breast cancer, 2018-2024



- This year (2024), 9.2% of subsequent-screened individuals ages 40-74 with abnormal mammograms were diagnosed with breast cancer.
- Over time (2020-2024), among subsequent-screened individuals, the proportion of abnormal mammograms that were diagnosed with breast cancer decreased slightly between 2022 and 2024.
 - The inclusion of ages 40-49 in the analysis decreased the overall positive predictive value due to younger individuals having a lower positive predictive value.

8] In Situ Cancer Detection Rate (Domain 4: Detection)

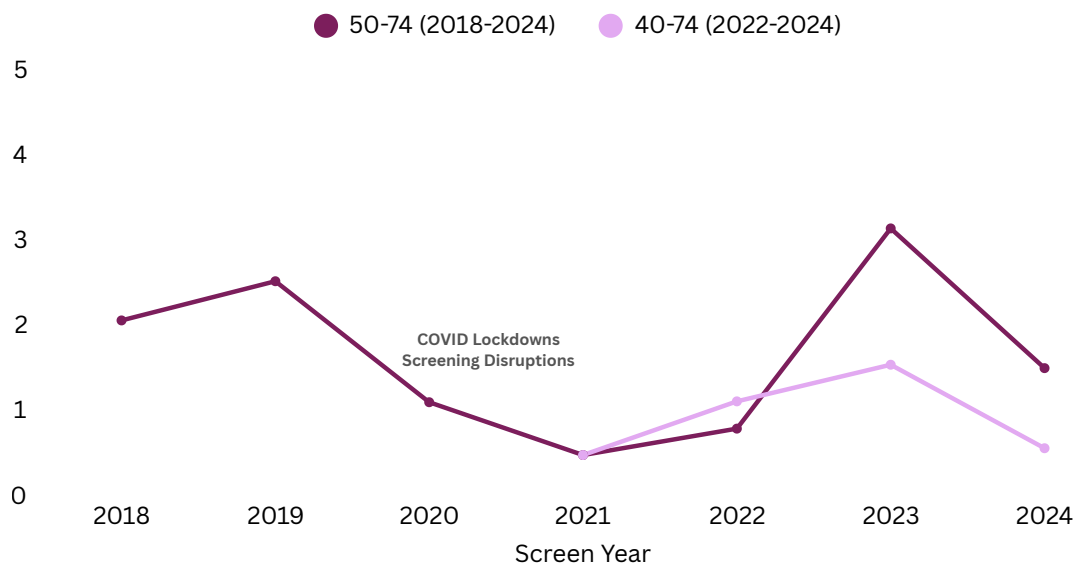
Definition: The number of ductal carcinoma in situ (DCIS) cancers detected per 1,000 screens. It is calculated separately for initial screen (first-time individuals) and for subsequent screens (individuals who had at least one prior screening mammogram).

Note: The in situ cancer detection rate is calculated for individuals ages 40-74 who came to screening in 2022, 2023 and 2024.

National Target: None

Results: Initial Screens (Figure 11a)

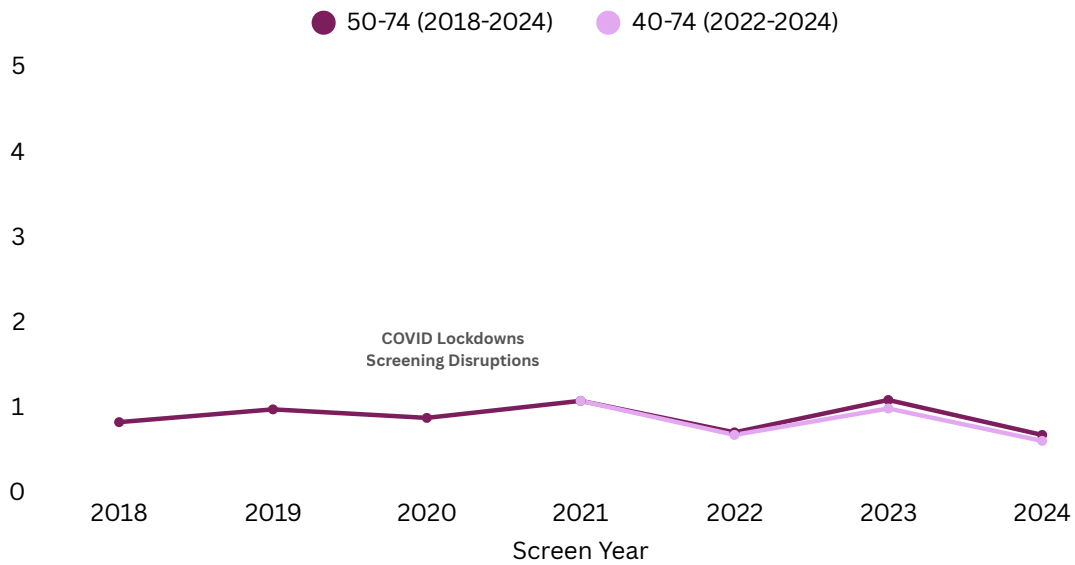
Figure 11a: Time trend in number of in situ cancers detected per 1,000 first-time mammograms, 2018–2024



- This year (2024), among first-time individuals ages 40-74, 0.55 in situ cancers were detected per 1,000 screens.
- Over time (2020-2024), the number of in situ cancers detected per 1,000 first-time mammograms remained stable since 2020 despite the change in target age group (ages 40-74) in 2022, 2023 and 2024.

Results: Subsequent Screens (Figure 11b)

Figure 11b: Time trend in number of in situ cancers detected per 1,000 subsequent-screened mammograms, 2018-2024



- This year (2024), among subsequent-screened individuals ages 40-74, 0.6 in situ cancers were detected per 1,000 screens.
- Over time (2020-2024), the number of in situ cancers detected per 1,000 subsequent-screened mammograms has been relatively stable since 2020.

9] Invasive Cancer Detection Rate (Domain 4: Detection)

Definition: The number of invasive cancers detected per 1,000 screens. It is calculated separately for initial screen (first-time individuals) and for subsequent screens (individuals who had at least one prior screening mammogram).

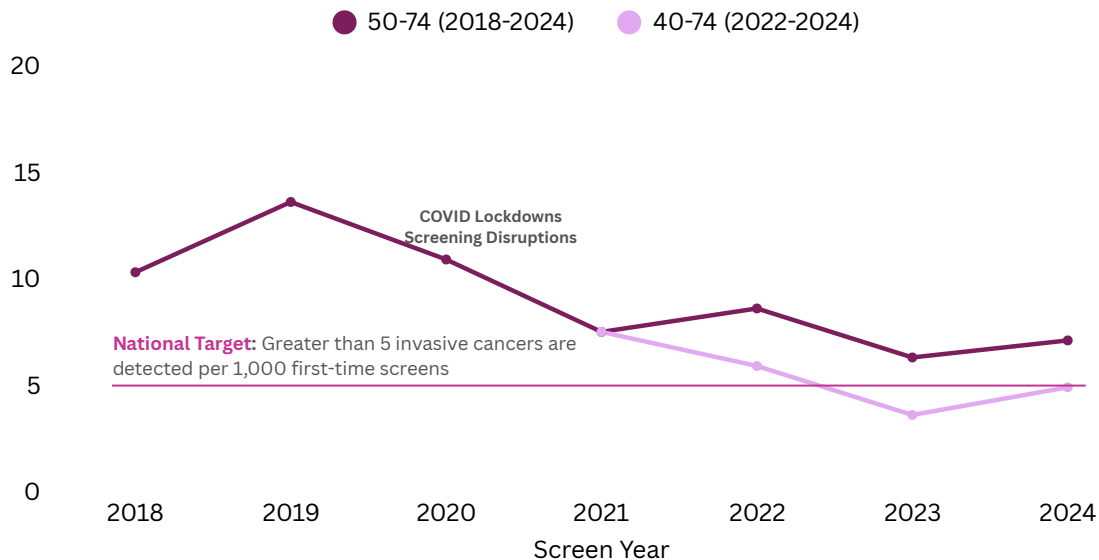
Note: The invasive cancer detection rate is calculated for individuals ages 40-74 who came to screening in 2022, 2023 and 2024.

National Targets:

- >5 cancers per 1,000 first-time mammograms
- >3 cancers per 1,000 subsequent-screened mammograms

Results: Initial Screens (Figure 12a)

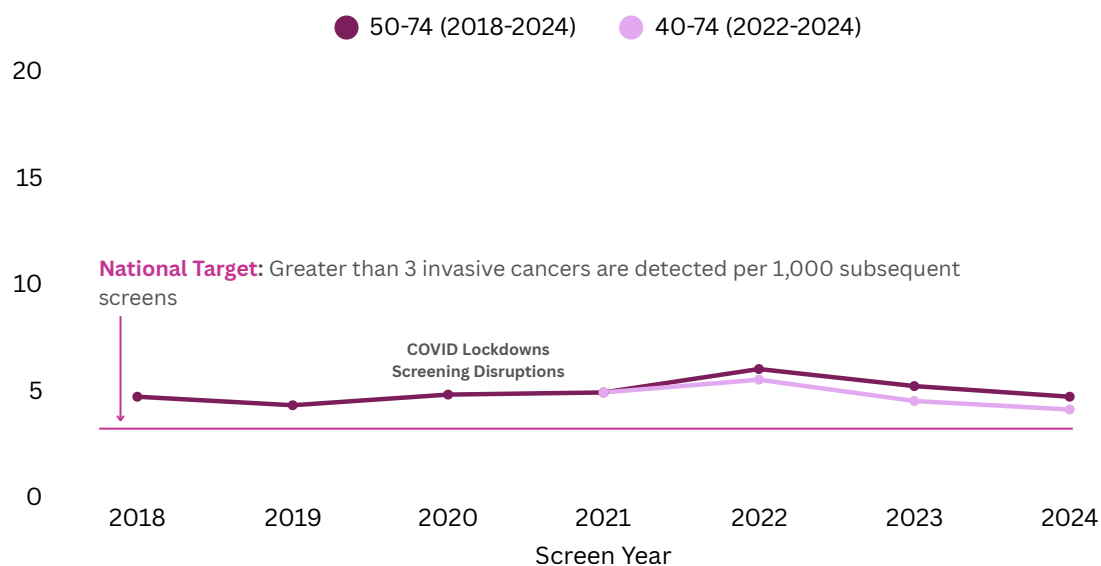
Figure 12a: Time trend in number of invasive cancers detected per 1,000 first-time mammograms, 2018–2024



- This year (2024), among first-time individuals ages 40-74, 4.9 invasive cancers were detected per 1,000 screens.
- Over time (2020-2024), a downward trend is observed in the number of invasive cancers that were detected per 1,000 first-time screens when the target age group changed to ages 40-74.
 - It was expected that the values would decrease with the inclusion of the 40-49 age group as they are at lower risk of breast cancer given the younger age

Results: Subsequent Screens (Figure 12b)

Figure 12b: Time trend in number of invasive cancers detected per 1,000 subsequent-screened mammograms, 2018–2024



- This year (2024), among subsequent-screened individuals ages 40-74, 4.1 invasive cancers were detected per 1,000 screens.
- Over time (2020-2024), a downward trend is observed in the number of invasive cancers that were detected per 1,000 subsequent screens.

10] Method of Detection (Domain 4: Detection)

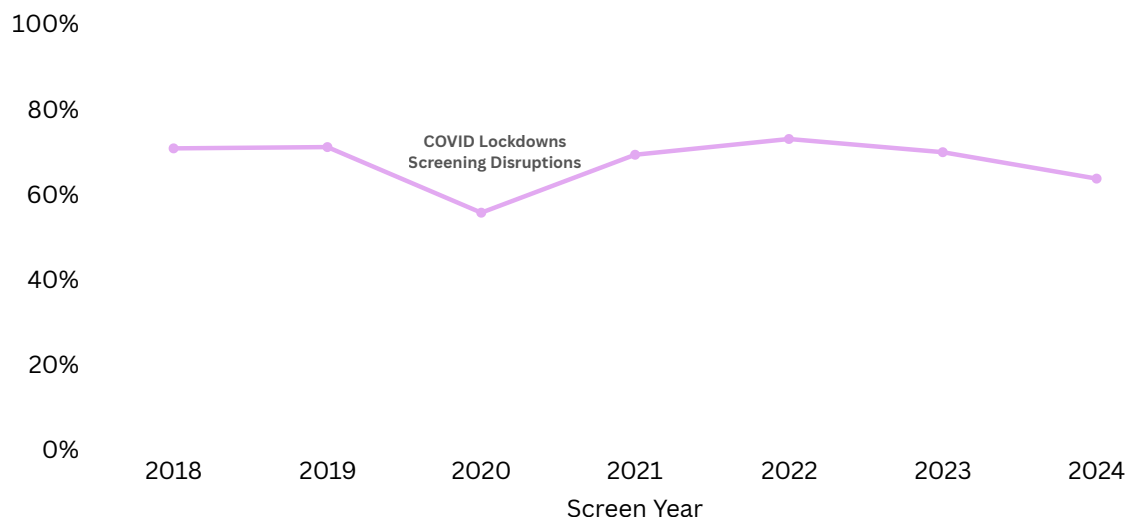
Definition: The proportion of breast cancers that are detected by breast screening.

Note: The proportion of breast cancers detected by breast screening is calculated as a percentage of the total number of breast cancers found by breast imaging (breast screening + diagnostic initiated imaging). It is calculated for individuals ages 40-74 who came to breast imaging from 2018 to 2024.

National Target: None

Results (Figure 13):

Figure 13: Time trend in the proportion of breast cancers (ages 40-74) that were detected by breast screening, 2018 – 2024



- This year (2024), 63.7% of breast cancers were detected by breast screening
- Over time (2020-2024), the proportion of screen-detected breast cancers has been slowly decreasing since 2022.
 - It is possible that this decrease is due in part to delays in diagnosis
 - Delays in access to screening can result in more advanced disease at diagnosis (i.e., entry into imaging with symptoms rather than screening)

11] Screen-Detected Invasive Cancer Tumour Size (Domain 5: Disease extent at diagnosis)

Definition: The percentage of invasive cancers with a tumour size $\leq 10\text{mm}$; the percentage of invasive cancers with a tumour size $\leq 15\text{mm}$

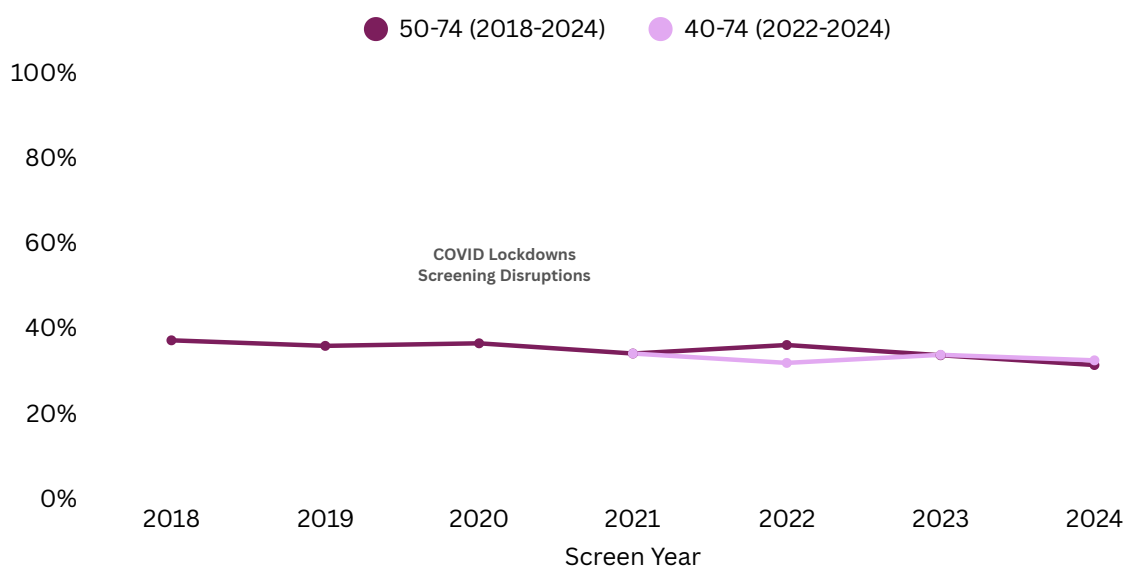
Note: The screen detected invasive cancer tumour size is calculated for individuals ages 40-74 who came to screening in 2022, 2023 and 2024.

National Targets:

- No target for the percentage of invasive cancers with a tumour size $\leq 10\text{mm}$
- $\geq 50\%$ screen-detected invasive tumours are $\leq 15\text{mm}$

Results: Invasive cancers with tumour size $\leq 10\text{mm}$ (Figure 14a)

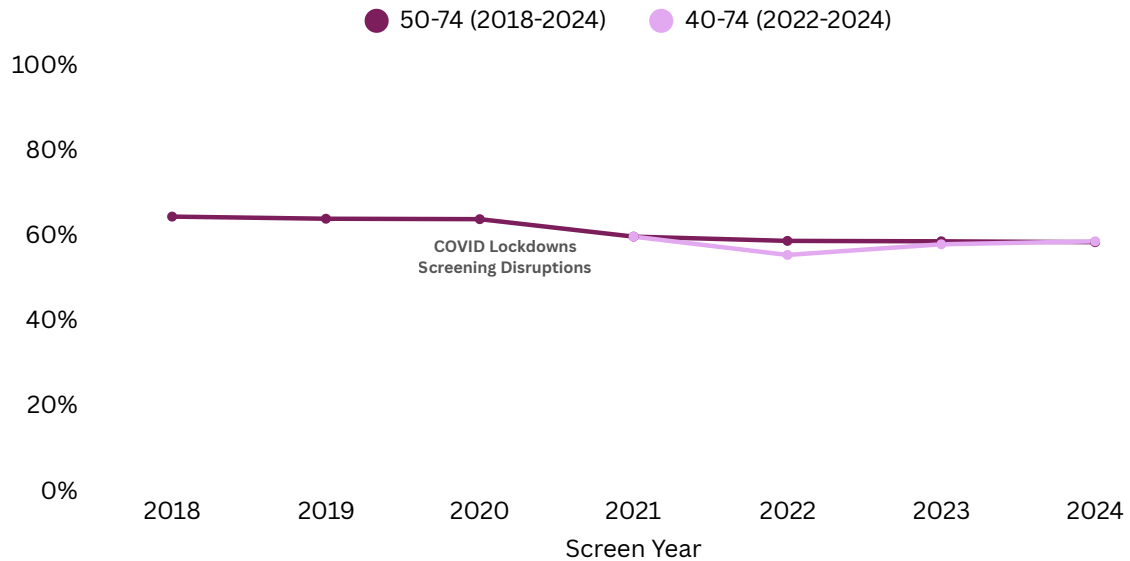
Figure 14a: Time trend in proportion of invasive cancers with tumour sizes 10mm or smaller, 2018–2024



- This year (2024), 32.4% of invasive cancers among individuals ages 40-74 had tumour sizes that were 10mm or smaller.
- Over time (2020-2024), proportion of screen-detected invasive cancers that were $\leq 10\text{mm}$ remained relatively stable.

Results: Invasive cancers with tumour size $\leq 15\text{mm}$ (Figure 14b)

Figure 14b: Time trend in proportion of invasive cancers with tumour sizes 15mm or smaller, 2018-2024



- This year (2024), 58.4% of invasive cancers among individuals ages 40-74 had tumour sizes that were 15mm or smaller. It remains above the national target.
- Over time (2020-2024), the proportion of screen-detected invasive cancers with tumour sizes $\leq 15\text{mm}$ remained relatively stable had the target age group not changed.

12] Proportion of Node Negative Screen-Detected Invasive Cancers (Domain 5: Disease extent at diagnosis)

Definition: The percentage of invasive cancers in which the cancer has not invaded the axillary lymph nodes.

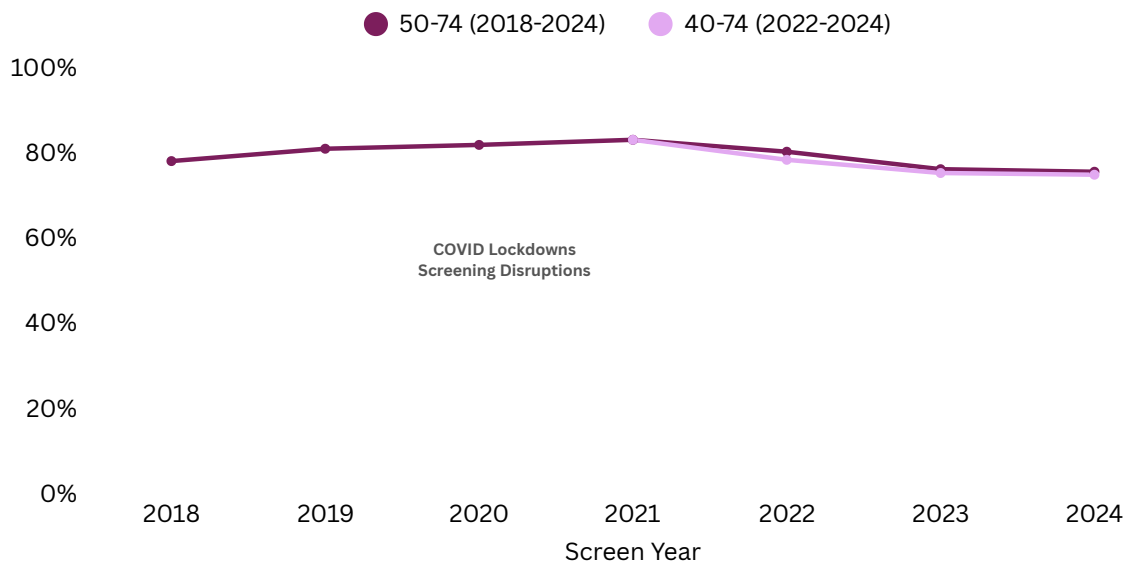
Note: The proportion of node negative screen detected invasive cancer is calculated for individuals ages 40-74 who came to screening in 2022, 2023 and 2024.

National Targets:

- >70% of screen detected cancers are node negative

Results: (see Figure 15)

Figure 15: Time trend in proportion of invasive cancers in which the cancer has not invaded the axillary lymph nodes, 2018-2024



- This year (2024), 74.8% of invasive cancers among individuals ages 40-74 were node negative. It remains above the national target.
- Over time (2020-2024), the proportion of screen-detected invasive cancers that are node negative has been decreasing.

Table 1: Quality Indicators by County of Residence, Individuals aged 40-74, Screen Year 2024 (January 01 - December 31 2024)

County of Residence	Number of Individuals	% of Individuals who chose Mobile screen	Number of First Time Individuals	Coverage		
				Participation Rate ¹ (National Target: ≥ 70%)	Retention Rate ² First Screen (National Target: ≥ 75%)	Retention Rate ² Subsequent Screen (National Target: ≥ 90%)
Annapolis	893	48.7%	148	31.1%	38.3%	58.7%
Antigonish	1356	1.4%	172	46.6%	52.9%	70.5%
Cape Breton	5611	88.2%	588	38.9%	46.3%	70.2%
Colchester	3175	4.1%	396	41.5%	38.2%	70.9%
Cumberland	1598	4.3%	196	37.9%	49.7%	73.5%
Digby	1126	40.9%	161	50.7%	48.2%	69.1%
Guysborough	492	40.2%	41	46.5%	58.1%	70.5%
Halifax	25486	1.1%	3394	44.3%	52.7%	72.5%
Hants	2734	5.0%	315	45.3%	46.0%	68.6%
Inverness	1034	72.5%	105	44.8%	55.7%	74.8%
Kings	3263	12.4%	456	38.7%	38.6%	59.3%
Lunenburg	3031	4.5%	375	41.4%	50.0%	68.4%
Pictou	2465	0.7%	280	39.7%	43.4%	69.2%
Queens	677	48.9%	103	45.9%	42.5%	67.3%
Richmond	733	67.3%	80	54.1%	47.4%	82.4%
Shelburne	775	39.1%	133	38.2%	41.4%	66.1%
Victoria	491	95.9%	45	46.2%	63.4%	75.9%
Yarmouth	1394	1.5%	162	39.8%	49.4%	71.0%
Nova Scotia	56334	17.1%	7150	43.0%	48.7%	70.5%

Note 1: Participation rate is presented for a 30-month period ending December 31, 2024.

Note 2: Retention Rate is presented for individuals screened in 2022, and who were re-screened within 30 months of their previous screen.

Table 2: Quality Indicators by Site, Zone and Province, Individuals aged 40-74, Screen Year 2024 (January 01 - December 31 2024)

Indicator	National Target	AM	AN	BR	Central***	KE	MA	NS	SY	TR	YA	Western Zone 1	Northern Zone 2	Eastern Zone 3	Central Zone 4	Nova Scotia†	
Number of Individuals who came to Screening	NA	1750	2194	2899	27305	3619	9665	2572	670	3821	2463	8981	8143	2864	27305	56958	
Number of 1st Screens	NA	220	261	361	3653	474	1167	304	85	460	319	1154	984	346	3653	7304	
Number of Screen Detected Breast Cancers	NA	small cell	14	14	141	18	NA	8	small cell	16	16	48	24	14	141	272	
Number of Breast Cancers Detected by Imaging	NA	5	25	25	201	42	NA	16	24	27	25	92	48	49	201	427	
Proportion of Screen-Detected Breast Cancers	NA	60.0%	56.0%	56.0%	70.1%	42.9%	NA	50.0%	12.5%	59.3%	64.0%	52.2%	56.3%	34.7%	70.1%	63.7%	
Follow-Up																	
Abnormal Call Rate																	
Initial	< 10%	14.5%	18.0%	16.3%	11.6%	12.2%	NA	22.7%	8.2%	16.1%	13.5%	13.9%	17.8%	15.6%	11.6%	13.3%	
Subsequent	< 5%	3.7%	7.4%	5.0%	4.5%	4.2%	NA	9.9%	3.9%	7.3%	7.2%	5.3%	7.4%	6.6%	4.5%	5.1%	
Diagnostic Interval																	
A) % notified within 2 weeks of screen	≥ 90%	71.0%	84.0%	87.9%	37.0%	88.1%	NA	88.9%	43.1%	86.4%	87.5%	86.2%	87.0%	81.9%	37.0%	56.2%	
B) Time from abnormal screen to definitive diagnosis	≥ 90%	37.1%	24.9%	56.1%	7.4%	50.8%	NA	33.1%	30.5%	24.6%	22.8%	43.4%	29.7%	27.8%	7.4%	23.5%	
– without tissue biopsy (% diagnosed within 5 weeks)	≥ 90%	27.8%	31.0%	64.4%	14.4%	46.7%	NA	32.7%	36.1%	26.0%	28.3%	46.3%	28.1%	34.4%	14.4%	24.5%	
– with tissue biopsy (% diagnosed within 7 weeks)																	
Quality of Screening																	
Benign: Malignant Core Biopsy Ratio																	
Initial	None	small cell	small cell	small cell	small cell	small cell	NA	small cell	small cell	small cell	small cell	small cell	small cell	small cell	small cell	small cell	7.46 : 1
Subsequent	None	small cell	1.50 : 1	3.09 : 1	3.27 : 1	0.57 : 1	NA	6.00 : 1	small cell	4.26 : 1	2.22 : 1	1.91 : 1	4.71 : 1	1.43 : 1	3.27 : 1	2.83 : 1	
Benign: Malignant Open Surgical Biopsy Ratio																	
Initial	≤ 1 : 1	small cell	small cell	small cell	small cell	small cell	NA	small cell	small cell	small cell	small cell	small cell	small cell	small cell	small cell	small cell	0.44 : 1
Subsequent	≤ 1 : 1	small cell	small cell	small cell	small cell	small cell	NA	small cell	small cell	small cell	small cell	small cell	small cell	small cell	small cell	small cell	0.13 : 1
PPV																	
Initial	≥ 5%	small cell	small cell	small cell	small cell	small cell	NA	small cell	small cell	small cell	small cell	small cell	small cell	small cell	small cell	small cell	4.1%
Subsequent	≥ 6%	small cell	8.4%	9.4%	11.0%	13.6%	NA	small cell	small cell	6.1%	9.7%	10.9%	4.0%	8.4%	11.0%	small cell	9.2%
Detection																	
In-Situ Cancer Detection Rate																	
Initial	None	0.00	0.00	small cell	small cell	0.00	NA	0.00	0.00	0.00	0.00	small cell	0.00	0.00	small cell	small cell	small cell
Subsequent	None	small cell	small cell	small cell	small cell	small cell	NA	small cell	small cell	small cell	small cell	small cell	small cell	small cell	small cell	small cell	0.68
Invasive Cancer Detection Rate																	
Initial	> 6 per 1,000 screens	small cell	small cell	small cell	small cell	small cell	NA	small cell	small cell	small cell	small cell	small cell	small cell	small cell	small cell	small cell	4.9
Subsequent	> 3 per 1,000 screens	small cell	5.7	3.9	4.3	5.4	NA	small cell	small cell	3.6	6.1	5.1	2.2	5.2	4.3	small cell	4.1
Disease Extent at Diagnosis																	
Screen Detected Invasive Tumour Size																	
≤ 10mm †	> 25% †	small cell	small cell	small cell	small cell	small cell	NA	0.0%	small cell	small cell	small cell	small cell	small cell	small cell	small cell	small cell	32.4%
≤ 15 mm	> 50%	small cell	76.9%	63.6%	58.2%	64.7%	NA	small cell	small cell	53.8%	57.1%	61.9%	54.5%	68.8%	58.2%	small cell	58.4%
Proportion of Node Negative Screen Detected	> 70%	100.0%	92.3%	72.7%	75.4%	88.2%	NA	50.0%	88.7%	53.8%	71.4%	78.6%	59.1%	small cell	small cell	small cell	74.8%
Invasive Cancer																	

NOTES:

Small Cell: when cell size is between 1 and 4, it is suppressed to prevent potential identification of patients, especially in smaller communities/sites.

*** This includes three screening sites: Cobequid, Dartmouth and Halifax.

† Nova Scotia totals include M4 (mobile van) data; M4 data not displayed in this table.

† No longer monitored at the national level, but NSBSP continues to monitor.

Nova Scotia Breast Screening Program Team

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Medical Advisor	Dr. Sian Iles
Program Coordinator	Linda Briggs

Operational Breast Imaging Sites, IWK Health Centre

Halifax	Halifax Screening Clinic, Halifax Shopping Centre Breast Imaging, 6 th Floor, IWK Health Centre
Cobequid	Cobequid Community Health Centre
Dartmouth	Dartmouth General Hospital

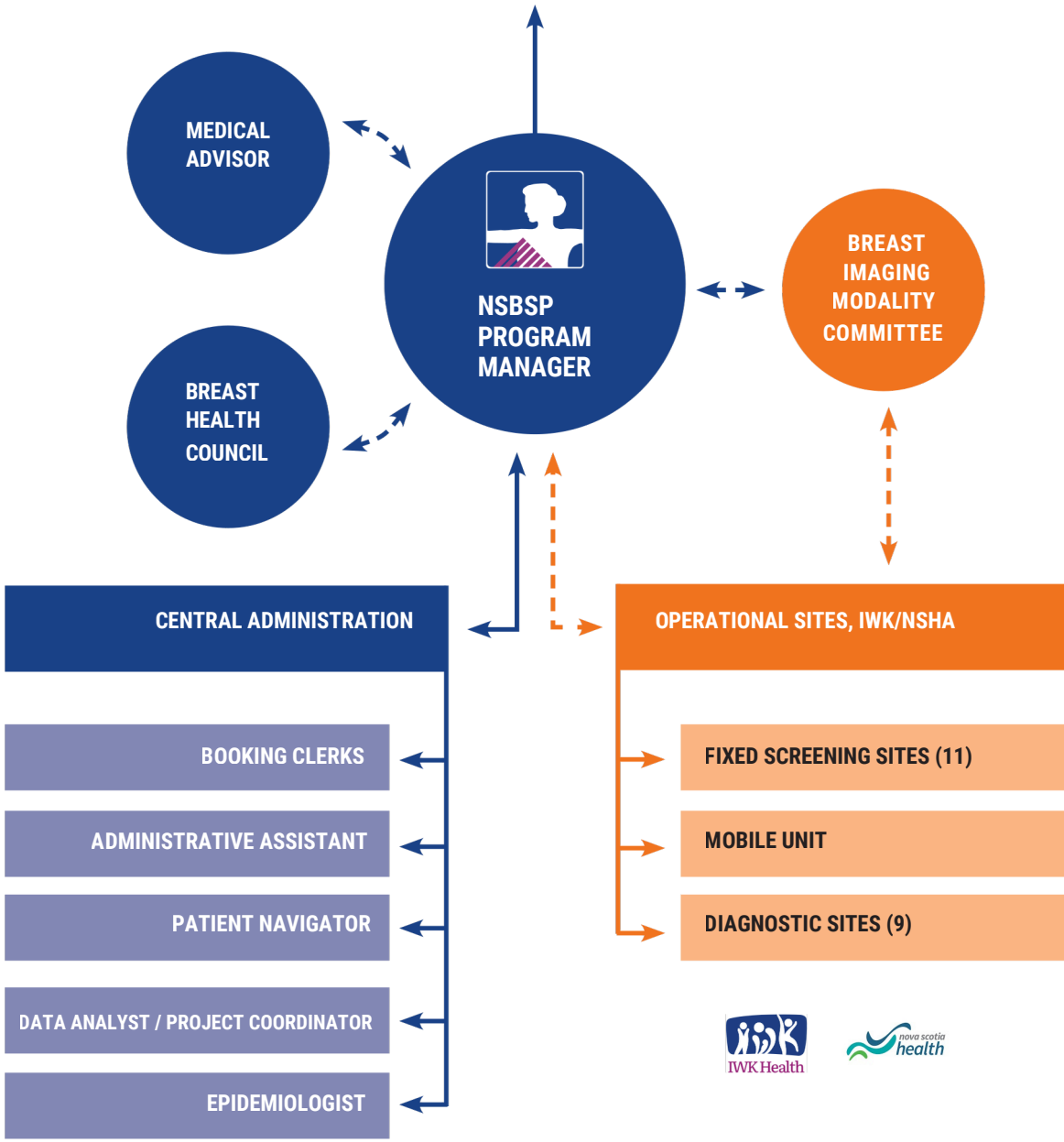
Operational Breast Imaging Sites, NSH Health Authority

Amherst	Cumberland Regional Health Care Centre
Antigonish	St. Martha's Regional Hospital
Bridgewater	South Shore Regional Hospital
Kentville	Valley Regional Hospital
New Glasgow	Aberdeen Hospital
Sydney	Cape Breton Regional Hospital
Truro	Colchester East Hants Health Centre
Yarmouth	Yarmouth Regional Hospital



IWK Health

IWK DIRECTOR: HEALTHY POPULATIONS & PROVINCIAL INITIATIVES



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