

NOVA SCOTIA BREAST SCREENING PROGRAM

Table 1: Quality Indicators by Site, Zone and Province, Individuals ages 50-74, Screen Year 2021

| Indicator | National Target | AM | AN | BR | Central ^o | KE | NG | SY | TR | YA | Western Zone 1 | Northern Zone 2 | Eastern Zone 3 | Central Zone 4 | Nova Scotia [§] |
|--|-----------------|--------------------|------------|------------|----------------------|------------|------------|------------|------------|------------|----------------|--------------------|----------------|----------------|--------------------------|
| Number of Individuals Participated in Screening | NA | 1117 | 1210 | 1960 | 17984 | 3092 | 1569 | 546 | 2682 | 2210 | 7262 | 5368 | 1756 | 17984 | 39547 |
| Number of 1st Screens | NA | 91 | 54 | 107 | 860 | 204 | 68 | 36 | 111 | 121 | 432 | 270 | 90 | 860 | 2121 |
| Number of Screen Detected Cancers | NA | 9 | 9 | 9 | 100 | 15 | 16 | small cell | 23 | 10 | 34 | 48 | 9 | 100 | 241 |
| Coverage | | | | | | | | | | | | | | | |
| Participation Rate (Ages 50-74), 30 month* | ≥ 70% | Data Not Available | | | | | | | | | | Data Not Available | | | 37.1% |
| Retention Rate (Ages 50-72)* | | | | | | | | | | | | | | | |
| Initial | ≥ 75% | 9.3% | 20.6% | 23.3% | 22.7% | 17.8% | 21.3% | 12.3% | 16.5% | 21.5% | 20.4% | 15.1% | 16.8% | 22.7% | 20.4% |
| Subsequent | ≥ 90% | 51.1% | 53.9% | 52.6% | 60.6% | 49.3% | 52.7% | 48.1% | 57.0% | 59.4% | 52.8% | 54.2% | 52.4% | 60.6% | 57.0% |
| Follow-Up | | | | | | | | | | | | | | | |
| Abnormal Call Rate | | | | | | | | | | | | | | | |
| Initial | < 10% | 12.1% | 31.5% | 15.9% | 14.7% | 13.2% | 14.7% | 16.7% | 15.3% | 18.2% | 15.3% | 14.1% | 25.6% | 14.7% | 15.3% |
| Subsequent | < 5% | 5.9% | 11.3% | 6.6% | 5.7% | 4.7% | 8.9% | 3.1% | 9.0% | 6.8% | 5.9% | 8.4% | 8.8% | 5.7% | 6.1% |
| Diagnostic Interval | | | | | | | | | | | | | | | |
| A) % notified within 2 weeks of screen | ≥ 90% | 97.2% | 94.7% | 98.3% | 98.2% | 98.8% | 99.7% | 90.3% | 96.4% | 82.8% | 93.8% | 97.5% | 93.3% | 98.2% | 96.9% |
| B) Time from abnormal screen to definitive diagnosis | | | | | | | | | | | | | | | |
| – without tissue biopsy (% diagnosed within 5 weeks) | ≥ 90% | 85.7% | 37.4% | 39.4% | 93.2% | 71.1% | 85.8% | 80.7% | 51.0% | 28.7% | 49.3% | 66.3% | 58.4% | 93.2% | 71.9% |
| – with tissue biopsy (% diagnosed within 7 weeks) | ≥ 90% | 86.7% | 46.7% | 42.9% | 52.2% | 64.1% | 66.7% | 89.8% | 61.2% | 27.6% | 42.4% | 67.0% | 73.4% | 52.2% | 55.1% |
| Quality of Screening | | | | | | | | | | | | | | | |
| Benign: Malignant Core Biopsy Ratio | | | | | | | | | | | | | | | |
| Initial | None | small cell | small cell | small cell | 6.14 : 1 | small cell | undefined | small cell | small cell | undefined | small cell | small cell | small cell | 6.14 : 1 | 4.78 : 1 |
| Subsequent | None | 1 : 1 | 1.57 : 1 | 2.57 : 1 | 2.84 : 1 | 1.14 : 1 | 1.75 : 1 | small cell | 1.17 : 1 | 3.73 : 1 | 2.34 : 1 | 1.33 : 1 | 1.27 : 1 | 2.84 : 1 | 1.95 : 1 |
| Benign: Malignant Open Surgical Biopsy Ratio | | | | | | | | | | | | | | | |
| Initial | ≤ 1 : 1 | small cell | small cell | small cell | small cell | small cell | undefined | undefined | small cell | small cell | small cell | small cell | small cell | small cell | 0.5 : 1 |
| Subsequent | ≤ 1 : 1 | 0 : 1 | small cell | small cell | 0.21 : 1 | 0 : 1 | small cell | small cell | small cell | small cell | 0.17 : 1 | 0.16 : 1 | small cell | 0.21 : 1 | 0.17 : 1 |
| PPV | | | | | | | | | | | | | | | |
| Initial | ≥ 5% | small cell | small cell | small cell | 4.8% | small cell | 0.0% | 0.0% | small cell | 0.0% | small cell | small cell | small cell | 4.8% | 5.2% |
| Subsequent | ≥ 6% | 9.8% | 4.6% | 6.6% | 9.7% | 9.5% | 11.9% | small cell | 9.5% | 7.0% | 7.7% | 10.3% | 6.8% | 9.7% | 9.9% |

| Indicator | National Target | AM | AN | BR | Central [Ⓒ] | KE | NG | SY | TR | YA | Western Zone 1 | Northern Zone 2 | Eastern Zone 3 | Central Zone 4 | Nova Scotia [§] |
|--|-----------------------|------------|------------|------------|----------------------|------------|------------|------------|------------|------------|----------------|-----------------|----------------|----------------|--------------------------|
| Detection | | | | | | | | | | | | | | | |
| In-Situ Cancer Detection Rate | | | | | | | | | | | | | | | |
| Initial | None | 0.00 | small cell | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | small cell | 0.00 | small cell |
| Subsequent | None | 0.00 | 0.00 | small cell | 1.28 | small cell | small cell | 0.00 | small cell | small cell | 0.88 | 1.18 | 0.00 | 1.28 | 1.07 |
| Invasive Cancer Detection Rate | | | | | | | | | | | | | | | |
| Initial | >5 per 1,000 screens | small cell | small cell | small cell | 7.0 | small cell | 0.0 | 0.0 | small cell | 0.0 | small cell | small cell | small cell | 7.0 | 7.5 |
| Subsequent | > 3 per 1,000 screens | 5.8 | 5.2 | 3.8 | 4.2 | 3.8 | 9.3 | small cell | 7.0 | 3.4 | 3.7 | 7.5 | 6.0 | 4.2 | 4.9 |
| Disease Extent at Diagnosis | | | | | | | | | | | | | | | |
| Screen Detected Invasive Tumour Size | | | | | | | | | | | | | | | |
| <= 10mm † | >25% † | 0.0% | small cell | small cell | 34.6% | 46.2% | small cell | small cell | 31.6% | small cell | 46.4% | 19.0% | small cell | 34.6% | 34.0% |
| <= 15 mm | >50% | small cell | small cell | 75.0% | 64.1% | 76.9% | 35.7% | small cell | 47.4% | small cell | 71.4% | 35.7% | 50.0% | 64.1% | 59.5% |
| Proportion of Node Negative Screen Detected Invasive Cancer | >70% | 66.7% | 87.5% | 75.0% | 83.3% | 76.9% | 64.3% | small cell | 84.2% | 100.0% | 82.1% | 73.8% | 91.7% | 83.3% | 90.0% |

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 locations: Cobequid, Dartmouth and Halifax

The benign to malignant core biopsy ratio is undefined when the denominator is zero.

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

* Participation Rate is presented for a 30 month period ending December 31 2021

‡ Retention Rate is presented for individuals screened in 2019, and who were re-screened within 30 months of their previous screen

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



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Table 2: Quality Indicators by Age Group, Screen Year 2021

| Indicator | National Target | 40 to 49 | 50 to 59 | 60 to 69 | 70-74 | 75+ |
|--|-----------------|------------|----------|------------|------------|--------------|
| Number of Individuals Participated in Screening | NA | 11126 | 15622 | 18116 | 5809 | 2957 |
| Number of 1st Screens | NA | 3757 | 1302 | 700 | 119 | 39 |
| Number of Screen Detected Cancers | NA | 35 | 68 | 110 | 63 | 38 |
| Coverage | | | | | | |
| Participation Rate, 30 month* | ≥ 70% | 31.1% | 35.9% | 45.9% | 41.6% | 11.5% |
| Retention Rate[‡] | | | | | | |
| <i>Initial</i> | ≥ 75% | 40.1% | 20.8% | 20.2% | 16.8% | 16.7% |
| <i>Subsequent</i> | ≥ 90% | 69.1% | 55.4% | 57.9% | 55.8% | 46.6% |
| Follow-Up | | | | | | |
| Abnormal Call Rate | | | | | | |
| <i>Initial</i> | < 10% | 15.7% | 15.1% | 15.4% | 17.6% | 17.9% |
| <i>Subsequent</i> | < 5% | 8.3% | 6.2% | 5.8% | 6.6% | 6.6% |
| Diagnostic Interval - Time from abnormal screen to definitive diagnosis | | | | | | |
| - without tissue biopsy (% diagnosed within 5 weeks) | ≥ 90% | 76.4% | 74.7% | 69.4% | 70.8% | 64.3% |
| - with tissue biopsy (% diagnosed within 7 weeks) | ≥ 90% | 45.8% | 54.8% | 52.1% | 62.4% | 71.8% |
| Quality of Screening | | | | | | |
| Benign: Malignant Core Biopsy Ratio | | | | | | |
| <i>Initial</i> | None | 8 : 1 | 9.33 : 1 | 2.5 : 1 | small cell | small cell ✓ |
| <i>Subsequent</i> | None | 5.68 : 1 | 2.97 : 1 | 1.87 : 1 | 1.09 : 1 | 0.95 : 1 ✓ |
| Benign: Malignant Open Surgical Biopsy Ratio | | | | | | |
| <i>Initial</i> | ≤ 1 : 1 | small cell | 0.83 : 1 | small cell | small cell | small cell ✓ |
| <i>Subsequent</i> | ≤ 1 : 1 | 0.47 : 1 | 0.25 : 1 | 0.2 : 1 | small cell | small cell ✓ |
| PPV | | | | | | |
| <i>Initial</i> | ≥ 5% | 2.7% | 3.1% | 8.3% | small cell | small cell |
| <i>Subsequent</i> | ≥ 6% | 3.1% | 7.0% | 10.1% | 16.2% | 18.0% |

| Indicator | National Target | 40 to 49 | 50 to 59 | 60 to 69 | 70-74 | 75+ |
|--|---------------------------------|-------------------|--------------|-------------------|-------------------|-------------------|
| Detection | | | | | | |
| In-Situ Cancer Detection Rate | | | | | | |
| <i>Initial</i> | <i>None</i> | <i>small cell</i> | <i>0.00</i> | <i>small cell</i> | <i>0.00</i> | <i>0.00</i> |
| <i>Subsequent</i> | <i>None</i> | <i>small cell</i> | <i>1.12</i> | <i>0.80</i> | <i>1.76</i> | <i>1.71</i> |
| Invasive Cancer Detection Rate | | | | | | |
| <i>Initial</i> | <i>>5 per 1,000 screens</i> | <i>3.2</i> | <i>4.6</i> | <i>11.4</i> | <i>small cell</i> | <i>small cell</i> |
| <i>Subsequent</i> | <i>> 3 per 1,000 screens</i> | <i>2.0</i> | <i>3.2</i> | <i>5.0</i> | <i>9.0</i> | <i>10.3</i> |
| Disease Extent at Diagnosis | | | | | | |
| Screen Detected Invasive Tumour Size | | | | | | |
| <i><= 10mm †</i> | <i>>25% †</i> | <i>37.0%</i> | <i>38.5%</i> | <i>30.5%</i> | <i>35.8%</i> | <i>36.4%</i> |
| <i><= 15 mm</i> | <i>>50%</i> | <i>66.7%</i> | <i>59.6%</i> | <i>55.8%</i> | <i>66.0%</i> | <i>51.5%</i> |
| Proportion of Node Negative Screen Detected Invasive Cancer | | | | | | |
| | <i>>70%</i> | <i>74.1%</i> | <i>78.8%</i> | <i>83.2%</i> | <i>86.8%</i> | <i>87.9%</i> |

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

* Participation Rate is presented for a 30 month period ending December 31 2021

‡ Retention Rate is presented for an individual who had a screen in 2019, and who was re-screened within 30 months of their previous screen

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



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Table 3: Quality Indicators Time Trend, 2018-2021

| Indicator | Target | 2018 | 2019 | 2020 | 2021 |
|--|---------|------------|------------|----------|------------|
| Number of Individuals Participated in Screening | NA | 46950 | 45391 | 21558 | 39547 |
| Number of 1st Screens | NA | 1950 | 1991 | 915 | 2121 |
| Number of Screen Detected Cancers | NA | 267 | 257 | 120 | 241 |
| Coverage | | | | | |
| Participation Rate, 30 month* | ≥ 70% | 51.4% | 51.4% | 43.6% | 37.1% |
| Retention Rate[‡] | | | | | |
| <i>Initial</i> | ≥ 75% | 39.2% | 35.6% | 21.8% | 20.4% |
| <i>Subsequent</i> | ≥ 90% | 73.9% | 73.5% | 50.1% | 57.0% |
| Follow-Up | | | | | |
| Abnormal Call Rate | | | | | |
| <i>Initial</i> | < 10% | 16.5% | 15.2% | 16.4% | 15.3% |
| <i>Subsequent</i> | < 5% | 5.7% | 5.3% | 5.5% | 6.1% |
| Diagnostic Interval - Time from abnormal screen to definitive diagnosis | | | | | |
| – without tissue biopsy (% diagnosed within 5 weeks) | ≥ 90% | 73.9% | 74.5% | 81.6% | 71.9% |
| – with tissue biopsy (% diagnosed within 7 weeks) | ≥ 90% | 56.7% | 61.2% | 67.2% | 55.1% |
| Quality of Screening | | | | | |
| Benign: Malignant Core Biopsy Ratio | | | | | |
| <i>Initial</i> | None | 4.48 : 1 | 2.64 : 1 | 3.55 : 1 | 4.78 : 1 ✓ |
| <i>Subsequent</i> | None | 2.1 : 1 | 1.85 : 1 | 1.98 : 1 | 1.95 : 1 ✓ |
| Benign: Malignant Open Surgical Biopsy Ratio | | | | | |
| <i>Initial</i> | ≤ 1 : 1 | small cell | small cell | 0 : 1 | 0.5 : 1 ✓ |
| <i>Subsequent</i> | ≤ 1 : 1 | 0.07 : 1 | 0.06 : 1 | 0.08 : 1 | 0.07 : 1 ✓ |
| PPV | | | | | |
| <i>Initial</i> | ≥ 5% | 6.9% | 10.6% | 6.7% | 5.2% |
| <i>Subsequent</i> | ≥ 6% | 9.6% | 9.7% | 9.6% | 9.9% |

| Indicator | Target | 2018 | 2019 | 2020 | 2021 |
|--|-----------------------|-------|-------|------------|------------|
| Detection | | | | | |
| In-Situ Cancer Detection Rate | | | | | |
| Initial | None | 2.05 | 2.51 | small cell | small cell |
| Subsequent | None | 0.82 | 0.97 | 0.87 | 1.07 |
| Invasive Cancer Detection Rate | | | | | |
| Initial | >5 per 1,000 screens | 10.3 | 13.6 | 10.9 | 7.5 |
| Subsequent | > 3 per 1,000 screens | 4.7 | 4.3 | 4.8 | 4.9 |
| Disease Extent at Diagnosis | | | | | |
| Screen Detected Invasive Tumour Size | | | | | |
| <= 10mm † | >25% † | 37.1% | 35.8% | 36.4% | 34.0% |
| <= 15 mm | >50% | 64.2% | 63.7% | 63.6% | 59.5% |
| Proportion of Node Negative Screen Detected Invasive Cancer | | | | | |
| | >70% | 78.0% | 80.9% | 81.8% | 83.0% |

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

* Participation Rate is presented for a 30 month period ending December 31. For example, the 2020 Participation Rate is calculated for the 30 month time period of July 1 2018 - December 31 2020

‡ Retention Rate is presented for women ages 50-72 who had a screen in 2016, 2017, 2018, 2019, and who were re-screened within 30 months of their previous screen

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

