

# NOVA SCOTIA BREAST SCREENING PROGRAM

Table 1: Quality Indicators by Site, Zone and Province, Individuals ages 50-74, Screen Years 2017\_2018

Indicator	Target	AM	AN	BR	Central <sup>o</sup>	KE	NG	SY	TR	YA	Western Zone 1	Northern Zone 2	Eastern Zone 3	Central Zone 4	Nova Scotia <sup>5</sup>
Number of Exams	NA	3112	3337	5890	40770	7531	4334	1082	5693	4808	18229	13139	4419	40770	91056
Number of 1st Screens	NA	354	127	277	1425	363	169	104	194	156	796	717	231	1425	3078
Number of Screen Detected Cancers	NA	14	25	29	252	47	30	11	36	30	106	80	36	252	542
<b>Coverage</b>															
<b>Participation Rate (Ages 50-74), 30 month*</b>	≥ 70%	47.5%	50.7%	51.1%	56.3%	46.0%	49.7%	43.7%	45.1%	49.2%	48.5%	47.1%	45.5%	64.1%	50.9%
<b>Retention Rate (Ages 50-72)*</b>															
Initial	≥ 75%	44.9%	32.5%	36.6%	39.6%	36.8%	25.4%	28.6%	36.1%	35.9%	36.5%	40.7%	31.4%	39.6%	39.2%
Subsequent	≥ 90%	80.0%	79.0%	82.2%	79.5%	76.6%	84.9%	65.5%	76.7%	81.3%	73.7%	71.2%	64.8%	76.2%	73.9%
<b>Participation Rate (Ages 50-69), 30 month*</b>	≥ 70%	50.3%	52.8%	53.3%	57.9%	48.7%	51.8%	45.6%	47.3%	50.7%	50.7%	49.3%	47.5%	57.9%	52.9%
<b>Retention Rate (Ages 50-67)*</b>															
Initial	≥ 75%	46.1%	33.8%	37.0%	40.1%	37.5%	28.6%	29.0%	37.3%	35.1%	36.9%	42.0%	32.4%	40.1%	40.2%
Subsequent	≥ 90%	77.2%	70.6%	78.6%	79.2%	76.7%	74.3%	60.2%	75.9%	79.7%	78.1%	75.7%	68.7%	79.2%	77.7%
<b>Follow-Up</b>															
<b>Abnormal Call Rate</b>															
Initial	< 10%	11.9%	19.7%	18.1%	12.6%	13.2%	19.5%	24.0%	33.5%	14.7%	15.2%	19.5%	21.6%	12.6%	19.2%
Subsequent	< 5%	9.2%	9.9%	7.0%	5.2%	5.4%	10.4%	9.7%	13.6%	7.6%	6.5%	11.5%	9.9%	5.2%	6.7%
<b>Diagnostic Interval</b>															
A) % notified within 2 weeks of screen	≥ 90%	95.5%	98.2%	94.5%	95.9%	92.5%	99.4%	89.1%	93.2%	90.7%	92.7%	95.8%	95.9%	95.3%	94.8%
B) Time from abnormal screen to definitive diagnosis															
– without tissue biopsy (% diagnosed within 5 weeks)	≥ 90%	75.2%	60.5%	63.9%	84.7%	78.8%	95.5%	65.2%	78.7%	13.6%	56.6%	82.8%	63.5%	84.7%	73.3%
– with tissue biopsy (% diagnosed within 7 weeks)	≥ 90%	67.6%	69.1%	63.4%	60.3%	68.7%	85.6%	74.0%	59.9%	20.0%	48.2%	68.8%	72.2%	60.3%	60.7%
<b>Quality of Screening</b>															
<b>Benign: Malignant Core Biopsy Ratio</b>															
Initial	None	small cell	small cell	small cell	6.31 : 1	1.33 : 1	small cell	small cell	small cell	small cell	2.38 : 1	small cell	1.40 : 1	6.31 : 1	4.36 : 1
Subsequent	None	1.26 : 1	1.12 : 1	2.12 : 1	2.02 : 1	0.91 : 1	2.13 : 1	0.7 : 1	4.26 : 1	2.17 : 1	1.63 : 1	2.87 : 1	1.00 : 1	2:01	1.87 : 1
<b>Benign: Malignant Open Surgical Biopsy Ratio</b>															
Initial	≤ 1 : 1	undefined	small cell	small cell	0 : 1	0 : 1	undefined	small cell	small cell	small cell	small cell	small cell	small cell	0 : 1	small cell
Subsequent	≤ 1 : 1	small cell	small cell	small cell	0.04 : 1	small cell	small cell	0 : 1	0.15 : 1	0 : 1	0.06 : 1	0.12 : 1	small cell	0.04 : 1	0.06 : 1
<b>PPV</b>															
Initial	≥ 5%	0.0%	small cell	small cell	7.8%	10.4%	0.0%	small cell	small cell	small cell	9.1%	small cell	small cell	7.8%	6.1%
Subsequent	≥ 6%	6.5%	8.4%	7.7%	13.5%	12.2%	8.1%	9.9%	5.4%	9.2%	9.8%	6.4%	8.7%	13.5%	10.0%

Indicator	Target	AM	AN	BR	Central <sup>△</sup>	KE	NG	SY	TR	YA	Western Zone 1	Northern Zone 2	Eastern Zone 3	Central Zone 4	Nova Scotia <sup>§</sup>
<b>Detection</b>															
<b>In-Situ Cancer Detection Rate †</b>															
Initial	None	0.00	0.00	0.00	small cell	small cell	0.00	0.00	small cell	0.00	small cell	small cell	0.00	small cell	small cell
Subsequent	None	small cell	small cell	1.05	1.10	0.95	1.69	0.00	1.07	small cell	0.94	1.23	small cell	1.10	0.97
<b>Cancer Detection Rate</b>															
Initial	None	0.0	small cell	small cell	9.8	13.8	0.0	small cell	small cell	small cell	13.8	small cell	small cell	9.8	11.7
Subsequent	None	5.9	8.3	5.4	7.1	6.7	8.4	9.6	7.3	7.0	6.4	7.4	8.6	7.1	6.8
<b>Disease Extent at Diagnosis</b>															
<b>Screen Detected Invasive Tumour Size †</b>															
<= 10mm †	>25% †	small cell	43.8%	26.3%	38.5%	48.4%	47.4%	75.0%	51.9%	33.3%	38.0%	46.4%	54.2%	38.5%	40.7%
<= 15 mm	>50%	small cell	68.8%	57.9%	69.8%	77.4%	63.2%	87.5%	63.0%	52.4%	64.8%	58.9%	75.0%	69.8%	66.9%
<b>Proportion of Node Negative Screen Detected Invasive Cancer †</b>															
	>70%	60.0%	81.3%	63.2%	79.9%	83.9%	89.5%	100.0%	70.4%	81.0%	77.5%	75.0%	87.5%	79.9%	74.5%

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 open surgical biopsy 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 2018

‡ Retention Rate is presented for women a screen in 2016, and who were re-screened within 30 months of their previous screen

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

† Data is not available for ages 70-74; indicator is calculated for ages 50-69



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**Table 2: Quality Indicators by Age Group, Screen Years 2017\_2018**

Indicator	National Indicator Target Ages: 50-69	40 to 49	50 to 59	60 to 69	70-74	75+
Number of Exams	NA	28749	40852	41436	8769	5823
Number of 1st Screens	NA	7213	2344	1177	187	93
Number of Screen Detected Cancers	NA	74	180	281	81	66
<b>Coverage</b>						
<b>Participation Rate, 30 month*</b>	≥ 70%	39.4%	51.0%	59.0%	38.8%	13.3%
<b>Retention Rate<sup>‡</sup></b>						
<i>Initial</i>	≥ 75%	57.3%	40.3%	38.9%	27.0%	26.1%
<i>Subsequent</i>	≥ 90%	82.3%	76.9%	72.8%	59.0%	56.3%
<b>Follow-Up</b>						
<b>Abnormal Call Rate</b>						
<i>Initial</i>	< 10%	14.5%	16.0%	15.6%	17.1%	12.9%
<i>Subsequent</i>	< 5%	10.5%	6.3%	7.1%	7.5%	7.7%
<b>Diagnostic Interval - Time from abnormal screen to definitive diagnosis</b>						
- without tissue biopsy (% diagnosed within 5 weeks)	≥ 90%	75.2%	73.9%	73.2%	71.7%	70.5%
- with tissue biopsy (% diagnosed within 7 weeks)	≥ 90%	58.4%	58.4%	62.7%	60.8%	60.6%
<b>Quality of Screening</b>						
<b>Benign: Malignant Core Biopsy Ratio</b>						
<i>Initial</i>	None	8.00 : 1	5.29 : 1	3.47 : 1	small cell	small cell
<i>Subsequent</i>	None	4.32 : 1	2.60 : 1	1.58 : 1	1.44 : 1	1.24 : 1
<b>Benign: Malignant Open Surgical Biopsy Ratio</b>						
<i>Initial</i>	≤ 1 : 1	0.30 : 1	small cell	small cell	small cell	small cell
<i>Subsequent</i>	≤ 1 : 1	0.27 : 1	0.09 : 1	0.05 : 1	small cell	0.00 : 1
<b>PPV</b>						
<i>Initial</i>	≥ 5%	2.9%	5.9%	6.0%	small cell	small cell
<i>Subsequent</i>	≥ 6%	2.8%	7.6%	11.2%	14.0%	17.1%

Indicator	National Indicator Target Ages: 50-69	40 to 49	50 to 59	60 to 69	70-74	75+
<b>Detection</b>						
<b>In-Situ Cancer Detection Rate</b>		40 to 49	50 to 59	60 to 69	70+	
Initial	None	0.83	small cell	small cell	small cell	
Subsequent	None	0.68	0.75	1.41	1.95	
<b>Cancer Detection Rate</b>		40 to 49	50 to 59	60 to 69	70 to 74	75+
Initial	None	4.2	9.4	9.3	small cell	small cell
Subsequent	None	3.0	4.8	7.9	10.5	13.1
<b>Disease Extent at Diagnosis</b>						
<b>Screen Detected Invasive Tumour Size</b>		40 to 49	50 to 59	60 to 69	70+	
<= 10mm †	>25% †	42.9%	42.4%	39.6%	43.8%	
<= 15 mm	>50%	62.5%	66.2%	67.4%	68.6%	
<b>Proportion of Node Negative Screen Detected Invasive Cancer</b>	>70%	71.4%	74.2%	81.3%	86.8%	

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 2018

‡ Retention Rate is presented for women who had a screen in 2015, and who were re-screened within 30 months of their previous screen

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**Table 3: Quality Indicators Time Trend, 2014 to 2018**

Indicator	Target	2014	2015	2016	2017	2018
Number of Exams	NA	41817	41671	43544	39966	46971
Number of 1st Screens	NA	2482	2001	2028	1665	1950
Number of Screen Detected Cancers	NA	273	271	222	227	267
<b>Coverage</b>						
<b>Participation Rate, 30 month*</b>	≥ 70%	54.3%	53.4%	54.4%	53.8%	51.4%
<b>Retention Rate<sup>‡</sup></b>						
<i>Initial</i>	≥ 75%	39.7%	36.7%	44.4%	36.0%	39.2%
<i>Subsequent</i>	≥ 90%	77.8%	77.0%	81.1%	78.9%	73.9%
<b>Follow-Up</b>						
<b>Abnormal Call Rate</b>						
<i>Initial</i>	< 10%	14.8%	14.7%	13.7%	15.3%	16.5%
<i>Subsequent</i>	< 5%	5.0%	5.2%	5.3%	5.8%	5.7%
<b>Diagnostic Interval - Time from abnormal screen to definitive diagnosis</b>						
– without tissue biopsy (% diagnosed within 5 weeks)	≥ 90%	78.6%	80.6%	83.9%	72.9%	73.9%
– with tissue biopsy (% diagnosed within 7 weeks)	≥ 90%	62.6%	70.7%	75.9%	65.8%	56.7%
<b>Quality of Screening</b>						
<b>Benign: Malignant Core Biopsy Ratio</b>						
<i>Initial</i>	None	2.90 : 1	1.94 : 1	4.15 : 1	4.50 : 1	4.48 : 1
<i>Subsequent</i>	None	1.80 : 1	1.66 : 1	2.03 : 1	1.71 : 1	2.10 : 1
<b>Benign: Malignant Open Surgical Biopsy Ratio</b>						
<i>Initial</i>	≤ 1 : 1	0.1 : 1	0.2 : 1	0.2 : 1	small cell	small cell
<i>Subsequent</i>	≤ 1 : 1	0.1 : 1	0.1 : 1	0.1 : 1	0.06 : 1	0.07 : 1
<b>PPV</b>						
<i>Initial</i>	≥ 5%	8.7%	11.6%	6.8%	4.3%	6.9%
<i>Subsequent</i>	≥ 6%	12.2%	11.6%	9.1%	9.7%	9.6%

Indicator	Target	2014	2015	2016	2017	2018
<b>Detection</b>						
<b>In-Situ Cancer Detection Rate †</b>						
Initial	None	2.01	1.50	0.00	small cell	small cell
Subsequent	None	1.07	1.01	0.75	1.02	0.73
<b>Cancer Detection Rate</b>						
Initial	None	10.9	15.5	9.4	7.2	11.3
Subsequent	None	5.0	4.8	4.9	5.7	5.4
<b>Disease Extent at Diagnosis</b>						
<b>Screen Detected Invasive Tumour Size †</b>						
<= 10mm †	>25% †	42.6%	36.3%	37.3%	41.9%	38.5%
<= 15 mm	>50%	64.9%	62.1%	60.4%	67.2%	66.1%
<b>Proportion of Node Negative Screen Detected Invasive Cancer †</b>						
	>70%	83.6%	81.4%	77.8%	80.6%	76.0%

For screen years 2014 to 2017, quality indicators were calculated for ages 50-69 (old target age group).

For screen year 2018, quality indicators were calculated for ages 50-74 (new target age group).

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 2018

‡ Retention Rate is presented for women ages 50-67 who had a screen in 2015, and who were re-screened within 30 months of their previous screen

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

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

† Data is not available for ages 70-74; indicator is calculated for ages 50-69

