NSHA DIAGNOSTIC TESTING
IWK CLINICAL
CLINICAL PRACTICE GUIDELINES

Title:	Radiological Breast Screening of High-Risk Women in Nova Scotia	Number:	**NSHA** DT-DI-025 **IWK** – 686
Sponsor:	Director of IWK Healthy Populations & Provincial Initiatives Director of IWK Pathology & Lab Medicine, Diagnostic Imaging, and Maritime Medical Genetics **NSHA** Senior Director, Diagnostic Imaging	Page:	1 of 8
Approved by:	Policy and Practice Committee **NSHA** VP, Quality and System Performance	Approval Date: Effective Date:	**NSHA** March 29, 2021 **IWK** February 9, 2021 March 29, 2021
Applies to:	Mammography Radiologists and Technologists, Nova Scotia Breast Screening Program Central Booking Staff and primary care providers.		

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PREAMBLE

The Nova Scotia Breast Screening Program (NSBSP) is a population-based, organized screening program. Its main goal is to find breast cancer at an early stage, when the cancer is easier to treat.

The Nova Scotia Department of Health & Wellness (DHW) established and funded the NSBSP as a provincial program in 1991. As a result of the DHW restructure in 2016, the responsibility and accountability for the NSBSP was shifted to the IWK Health Centre on April 1, 2016.

The purpose of the *Radiological Breast Screening of High-Risk Women* Clinical Practice Guideline is to assist radiologists, technologists, primary care providers, pediatric oncologists, radiation oncologists, breast surgeons, medical geneticists and Nova Scotia women in understanding:

- The standardized approach to radiological screening for breast cancer in high-risk women pre-diagnosis, and,
- How to utilize these resources appropriately and effectively in Nova Scotia.

This clinical practice guideline was developed in consultation with radiologists, primary care providers, pediatric oncologists, radiation oncologists, breast surgeons and medical geneticists.

This clinical practice guideline addresses the criteria for determination of high risk, eligibility for high-risk radiological screening, the approach to screening of these women, referral to high-risk screening and breast MRI contraindications.

POLICY STATEMENTS

Women aged 30 to 74 at high risk of breast cancer are eligible to receive combined screening mammogram and screening breast magnetic resonance imaging (MRI) annually.

Note - This would include (see Appendix A-Definitions):

- Cisgender women
- Trans* women who have taken gender affirming hormones (for example; estrogen) for more than five years
- Trans* men who have not had gender affirming chest surgery and breast tissue remains present

PRINCIPLES AND VALUES

The Nova Scotia Breast Screening Program (NSBSP) is committed to provide equitable and culturally inclusive breast screening that is high quality, standardized, accountable and seamless to all women of Nova Scotia.

NSBSP oversees the delivery of mammography screening for high-risk women that is consistent with the following national cancer screening guideline:

- The Canadian Association of Radiologists (CAR) *Practice Guidelines and Technical Standards for Breast Imaging and Intervention*, 2016.

CLINICAL PRACTICE GUIDELINES

1. CRITERIA FOR DETERMINATION OF HIGH RISK

Women are considered to be at high risk if they fall into one of the risk groups below:

1. Known genetic mutation where mutation is associated with a high lifetime risk of breast cancer (e.g., BRCA1, BRCA2, Cowden's Syndrome). The recommendation of a genetics service will also be accepted in the event that a single mutation has not, or cannot, be identified, but the woman is considered by the genetics service to be at high risk.

2. Someone who has declined genetic testing and who is the first degree relative of a known mutation carrier (e.g., BRCA 1, BRCA2)

3. High lifetime risk (>25%) of breast cancer as established and documented by a standard breast cancer risk assessment model (for example, including, but not limited to: IBIS, BOADICEA).

4. History of having received radiation as cancer treatment to the chest area (therapeutic thoracic radiotherapy) before age 30. Screening is not indicated until 8 years after the end of radiotherapy or age 30, whichever date is later

2. ELIGIBILITY FOR HIGH RISK RADIOLOGICAL SCREENING

High risk women are eligible for radiological screening if they:

- Are asymptomatic,
- Have no personal history of breast cancer†,
- Have not undergone prophylactic bilateral mastectomy†,
- Are aged 30 to 74 years, **and**
- Fall into one of the risk groups listed in *Criteria for Determination of High Risk* above.

NOTE: Upon request, high risk women with a personal history of breast cancer who have not undergone prophylactic bilateral mastectomy will still be imaged according to current breast cancer surveillance practices.

NOTE: Women ages 29 and under who are at high risk of developing breast cancer can receive screening mammography/screening breast MRI with a primary care provider's referral. However, annual requisitions are required until the woman turns 30. Please see sections 4 and 5 below for more details.

3. RECOMMENDED SCREENING INTERVAL

For women who meet the high-risk eligibility criteria:

- Screening mammogram and screening breast magnetic resonance imaging (MRI) every year.

4. SCREENING PROCESS

Women who are considered to be at high risk of breast cancer will be screened as follows:

- A screening event consists of two modalities: mammography and breast MRI.
- The screening interval is one year.
- The screening event begins with a mammogram.
- MRI is performed within one month of mammography.
- The mammogram should be available at the time of MRI reporting.
- If either the mammogram or the MRI is abnormal, the screen event is considered to be abnormal.
- Screening continues with both mammography and MRI until age 69, and with mammography alone until age 74.
- Women who are in good health at age 75 may continue to be screened with mammography (self-referral) but will not be automatically reminded by the NSBSP.

NOTE: Asymptomatic pregnant or lactating women are ineligible for screening. Regular screening should resume 6 months following childbirth or the end of lactation, whichever is later.

5. REFERRAL TO HIGH RISK SCREENING

Women cannot self-refer for high risk screening; a referral from a primary care provider is required.

Primary care providers may refer women to high-risk breast screening by completing a breast imaging requisition form with clear documentation of patient eligibility, and faxing the completed form to NSBSP.

Ages 29 and younger:

- Annual requisitions for screening mammography/screening breast MRI are required until she turns age 30.

Ages 30-74:

- Once a woman has their first high risk screening event, continues to be asymptomatic and has not been diagnosed with breast cancer, annual requisitions for screening mammography and screening breast MRI will no longer be required.
- Their continued screening episode will be managed by NSBSP Central Booking to ensure adherence to these guidelines.

6. CONTRAINDICATIONS

Possible contraindications to breast MRI may include, but are not limited to:

- Claustrophobia
- Patient size
- Previous reaction to Gadobutrol (for example Gaudiest™ or other gadolinium contrast agent)
- Presence of cardiac pacemakers
- Ferromagnetic intracranial aneurysm clips
- Certain neurostimulators
- Certain cochlear implants
- Certain other ferromagnetic implants, devices, foreign bodies, or electronic devices

Women with any of these contraindications, or if they refuse to have a breast MRI, will be screened only with mammography.

REFERENCES

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[3] Katz, J and Patel A. "What is the Tyrer-Cuzick model (IBIS) tool) for breast cancer risk assessment?" Medscape. Accessed on January 25 20201 from https://www.medscape.com/answers/1945957-180248/what-is-the-tyrer-cuzick-model-ibis-tool-for-breast-cancer-risk-assessment#:~:text=The%20Tyrer%2DCuzick%20model%2C%20or,the%20course%20of%20her%20lifetime.

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Appendices

Appendix A – Definitions

Appendix A: Definitions

Defined term	Definition text
Cisgender Women	Women whose gender identity correspond with their sex assigned at birth.
Trans* Women	A person whose sex assigned at birth is male, and who identifies as female (2).
Trans* Men	A person whose sex assigned at birth is female, and who identifies as a male (2).
IBIS	The Tyrer-Cuzick model, or IBIS tool, is used to calculate a person's likelihood of carrying the BRCA1 or BRCA2 mutations. It estimates the likelihood of a women developing breast cancer in 10 years and over the course of her lifetime. The tool is used to help inform a person's decision-making about genetic counselling and testing. If the model predicts a 10% or greater chance that the woman has a mutation in BRCA1, BRCA2, or both, genetic counseling is advised (3).
BOADICEA	The Breast and Ovarian Analysis of Disease Incidence and Carrier Estimation Algorithm (BOADICEA) is a computer program that is used to calculate the risk of breast and ovarian cancer in women based on their family history. It is also used to calculate the probability that they are carriers of cancer0associated mutations in the BRCA1 or BRCA2 gene (4).

DISTRICT HEALTH AUTHORITY/IWK POLICIES BEING REPLACED

(Please List)

VERSION HISTORY

Major Revisions (e.g. Standard 4 year review)	Minor Revisions (e.g. spelling correction, wording changes, etc.)
March 29, 2021 New to NSHA	