Breast CA Screening Clinical Practice Guidelines

Definition

Target group:

- **Females.**
- Age: 40-69 years or 30-39 years with personal or family history of breast/ ovarian cancer.
- Not pregnant.
- Not lactating (passed on weaning at least 3 months).
- No symptoms of breast cancer e.g. breast lump, nipple discharge, dimpling, skin changes on breast or nipples, pain

Assessment (History and Examination)

1. Identify the complaint
    a. Consider patient's age: carcinoma is more likely around and after the menopause, whereas fibroadenoma is more common in young women.
    b. Ask: "When and how did you first notice it? Any history of previous breast lumps?"
    c. Duration since onset.
    d. Characteristics of the mass
        - Hard: a discrete lump suggests fibroadenoma if it is solid with a smooth surface, or a fibroadenotic cyst if fluctuant; a poorly defined margin or evidence of tethering suggests carcinoma, or non-infective mastitis.
        - Soft: suggests a lipoma or a lax cyst.
    e. Any change in size over time or in relation to the menstrual cycle (fibroadenosis may produce a painful, lumpy breast prior to menstruation).
    f. Any pain (commonest causes include infection (e.g. acute mastitis, breast abscess) and fibroadenosis (cyclical or acyclic). Uncommon causes include carcinoma or Tietze's disease (idiopathic costochon-dritis, usually in the second rib).
    g. Any redness, fever, or discharge.
    h. Predisposing events: trauma (fat necrosis), breast feeding (mastitis or abscess).
    i. Any risk factors for breast cancer:
        - Advanced age.
        - Overweight or obese.
        - Menarche before 12 years of age.
        - Menopause after 55 years of age.
        - Nulli-parity or age older than 35 years at first delivery.
        - High breast density on mammography.
        - Prior thoracic radiation exposure.
        - BRCA1 or BRCA2 mutation.
        - First degree relative with breast or ovarian cancer.

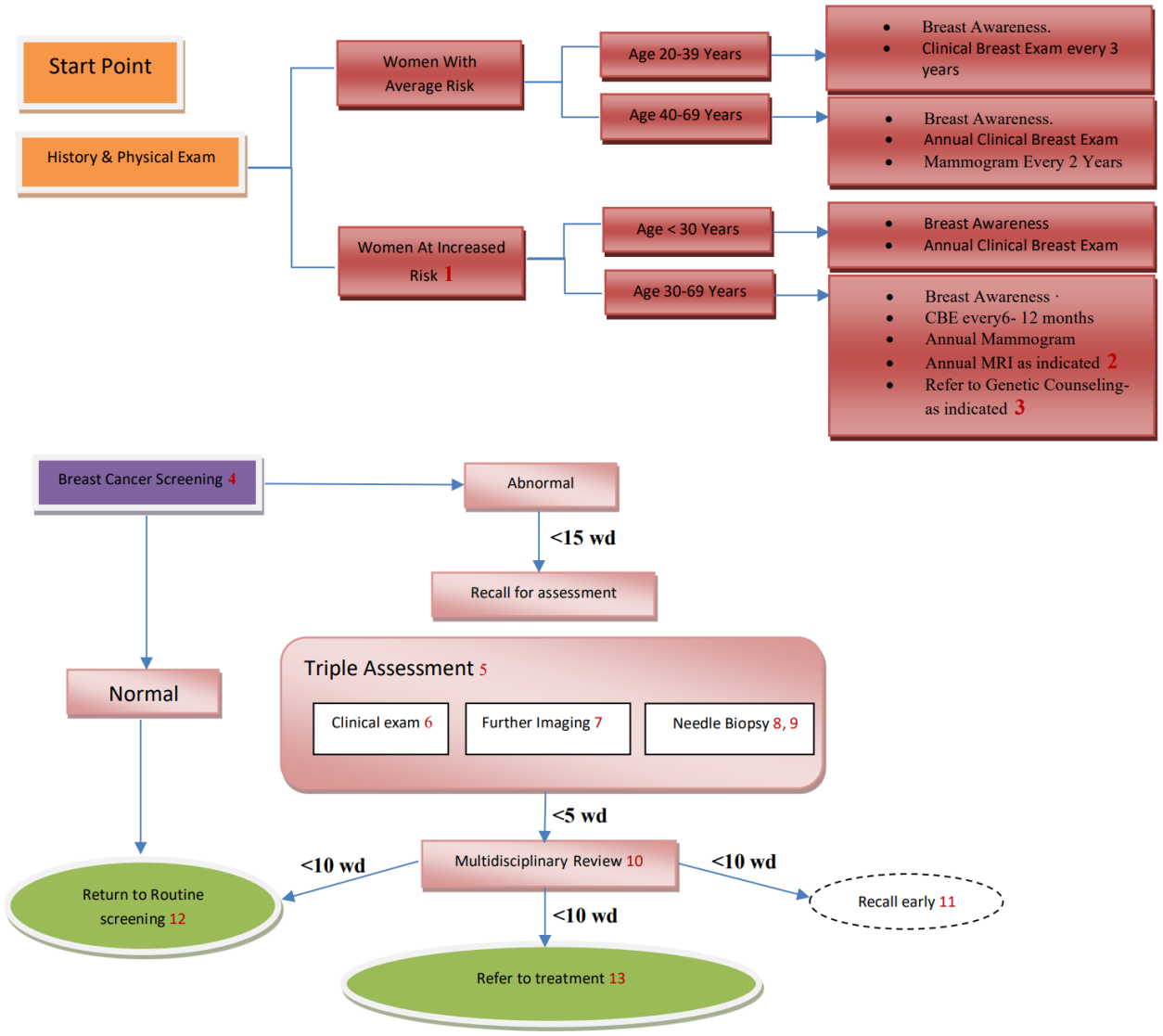
2. Drug and stimulants use: hormone therapy or oral contraceptives.
3. Past Medical and Surgical history: history of atypical hyperplasia or lobular carcinoma in situ, One prior breast biopsy (regardless of results), personal history of breast or ovarian cancer.
4. Social history: Alcohol consumption (more than one drink per day).
5. Examination: (ideally performed the week after menses when the breast tissue is least engorged).
    a. The breasts should be inspected for asymmetry; nipple discharge; obvious masses; and skin changes such as dimpling, inflammation, rashes, or retraction of the nipple.
    b. If there is any mass, comment on: size, site (which quadrant is it in), consistency, borders, mobile or fixed, overlying skin changes.
    c. With the patient supine and her arms overhead, palpate the breast tissue, including the nipple areolar complex. Check the nipple for any discharge (squeeze the nipple gently). A commonly described method for clinical breast examination emphasizes using the pads of the middle three fingers, moving in dimesized circular motions while applying light, medium, and deep pressure at each point along a vertical strip pattern.
    d. Examined the axillae, supraclavicular area, chest wall, also check for hepatomegaly.

Management

1. Explain to the patient:
    a. Breast lumps are very common in women and cause considerable anxiety. However, most are benign, that is, not cancerous. Some women have naturally lumpy breasts due to the nature of their breast tissue and this is usually no reason for concern. In many instances the lumps turn out to be areas of thickening of normal breast tissue.
    b. According to figures from breast clinics the three most common causes of breast lumps are:
        - Fibrocystic disease (also known as: mammary dysplasia or fibroadensosis): 32%
        - Fibroadenoma: 23%. "Breast mouse", which is a smooth, discrete breast lump consisting of fibrous and adenomatous (glandular) tissue.
        - Cancer: 22%.
        - Others: simple cysts, fat necrosis, milk (lactation) cysts, papilloma of the duct and mammary duct ectasia.
2. Analgesia: for painful breast.
3. Refer the patient urgently:
    a. If has history of breast cancer.
    b. If suspicious symptoms (unilateral symptoms, nipple distortion, persistent skin changes, bloody discharge).
    c. If after menopause.
    d. If she is 30 years old or above with a discrete lump that persists after her next period.
    e. If she is below 30 years old, with:
        - A lump that enlarges.
        - A lump that is fixed and hard.
        - Other reasons for concern such as family history.

f. If male, especially when he is 50 years old or above with a unilateral, firm subareolar mass with or without nipple distortion or associated skin changes.

4. Consider non-urgent referral in:
   a. Patients below 30 years old with a lump.
   b. Patients with breast pain and no palpable abnormality, when initial treatment fails and or with unexplained persistent symptoms. (Use of mammography in these patients is not recommended.)
5. Order required investigations (BRA gene, Ultrasound, Mammography, fine needle aspiration).



1-Women at increased risk of breast cancer are defined in Appendix 1.
2 -Indication for MRI is stipulated in Appendix 2.
3- Criteria for referral to Genetic Counselor is detailed in Appendix 3.
4 -Women with the following criteria should be excluded from screening with mammogram: pregnant, breast feeding, had bilateral mastectomy, and had recent mammogram within 12-24 months, under the age of 40, unless she is at increased risk
5- Triple assessment must be performed in Diagnostic Breast Assessment Unit.
6- Clinical examination is mandatory for every woman with a confirmed mammographic or ultrasound abnormality that needs needle biopsy
7- Further imaging usually involve further diagnostic mammography and/or ultrasound
8 -Needle biopsy should be performed under image guidance. Clip placement is done at the time of core needle biopsy to identify lesion location.
9 -Cytology should no longer be used alone to obtain a non-operative diagnosis of breast cancer
10-Results of assessments are recommended to be discussed by a multidisciplinary team. Women must be informed about results within 5 working days.
11 -Early recall is exceptional screening outcome and should be monitored and audited
12 Screening frequency will follow recommendation specified in appendix 1
13 Referral of histologically confirmed cancer cases to treatment must be made within 10 working days, following diagnosis.

Appendix 1:

BREAST CANCER EARLY DETECTION SCREENING RECOMMENDATION:

A summary of Screening Recommendations:

Screening Category	Age	Screen Assessment tools
Women at average Risk	20 – 39 years	• Breast Awareness • Clinical Breast Exam every three years
	≥ 40 years	• Breast Awareness • Clinical Breast Exam yearly • Mammography every two years
Women at increased Risk		• Breast Awareness • Clinical Breast Exam every 6-12 months • Annual Mammography screening • Annual MRI screening - as indicated • Referral to genetic counselor –for strong familial/genetic predisposition

Adapted from: NCCN Clinical Practice Guidelines in Oncology. Breast Cancer Screening and Diagnosis. V.1.2011

Eligibility for screening:

- No acute breast symptoms.
- No personal history of breast cancer.
- No current breast implants and has not had a screening mammogram within the last 23 months for average risk women.

Women at Increased Risk

A woman is considered at higher risk of developing breast cancer if she has one or more of the following criteria:

- Previous treatment with chest radiation at a young age (between age of 10-30)
- Previous history of Breast cancer.
- Lobular carcinoma in situ (LCIS) or Atypical ductal hyperplasia (ADH) on previous breast biopsy
- Have a known BRCA1 or BRCA2 gene mutation (based on having had genetic testing)
- Have a first-degree relative (parent, brother, sister, or child) with a BRCA1 or BRCA2 gene mutation, and have not had genetic testing themselves
- Women who have a lifetime risk of 20-25% as defined by models largely dependent of family history
- 5-years risk of developing invasive breast cancer of ≥ 1.7 % in women aged ≥35 (per Gail model)
- Strong family history or genetic predisposition

Screening Recommendations for women at Increased Risk

Screening Category	Age	Screen Assessment tools
Category A: Eligible for direct entry into the high-risk breast screening program based on personal and family history. Must meet one of the following risk criteria:		
• Previous treatment with chest radiation at a young age (between age of 10-30)	Age < 30 years	· Breast Awareness · Annual Clinical Breast Exam
	Age ≥30 years	· Breast Awareness · Clinical Breast Exam every 6-12 months · Annual Mammography screening begin 8-10 years after radiotherapy or age > 25 years, whichever come last) · Annual MRI screening
• Have a known BRCA1 or BRCA2 gene mutation (based on having had genetic testing) • Have a first-degree relative (parent, brother, sister, or child) with a BRCA1 or BRCA2 gene mutation, and have not had genetic testing themselves • Previously assessed by a genetic clinic (using the IBIS or BOADICEA tools) as having a ≥20 percent personal lifetime risk of breast cancer based on family history	Age < 30 years	· Breast Awareness · Annual Clinical Breast Exam
	Age ≥30 years	· Breast Awareness · Clinical Breast Exam every 6-12 months · Annual Mammography screening · Annual MRI screening
• Previous history of Breast cancer		· Clinical Breast Exam every 6-12 months in the first 5 years, annually thereafter. · Annual Mammography screening
• 5-years risk of developing invasive breast cancer of ≥ 1.7 % in women aged ≥35 (per Gail model)		. Breast Awareness . Clinical Breast Exam every 6-12 months . Annual Mammography screening
• Lobular carcinoma in situ (LCIS) or Atypical ductal hyperplasia (ADH) on previous breast biopsy		

Category B: Genetic Assessment required determining eligibility for high-risk breast screening. Must meet one of the following risk criteria:
• first-degree relative of a carrier of the BRCA1 or BRCA2 gene mutation and has not had genetic counselling or genetic testing; or • Personal or family history of breast or ovarian cancer suggestive of a hereditary breast cancer syndrome

Breast and Ovarian Cancer and Family History Risk Categories

Breast and Ovarian Cancer and Family History Risk Categories			
Family Health History Risk Category	**Family Health History**	**Example**	**What You Can Do**
Average: Typically, not increased risk, similar to the general population risk	No first– or second-degree relatives with breast or ovarian cancer *or* One second-degree female relative with breast cancer (in one breast only) diagnosed after age 50	Grandmother with breast cancer diagnosed at age 75	• Get mammograms and other breast exams as recommended by your doctor • Keep a healthy weight, exercise regularly, and make other choices to lower your risk • Discuss any concerns with your health care provider **Genetic counseling and testing for hereditary breast and ovarian cancer is not typically recommended for this type of family**
Moderate: Somewhat higher than the general population risk, but most women from these types of families will not develop breast or ovarian cancer	One or two first– degree or two second-degree female relatives with breast cancer (in one breast only), with both relatives diagnosed after age 50 *or* One or two first– or second-degree relatives with high grade prostate cancer	Mother with breast cancer diagnosed at age 68 and maternal aunt (mother's sister) with breast cancer diagnosed at 62	Taking action may be of greater benefit for women with a moderate vs. average (compared with average) risk family history. • Get mammograms and other breast exams as recommended by your doctor, with mammograms possibly starting at an earlier age (between ages 40 and 49) for those women with a parent, sibling, or child with breast cancer • Keep a healthy weight, exercise regularly and make other choices to lower your risk • Discuss any concerns with your healthcare provider **Genetic counseling and testing for hereditary breast and ovarian cancer is unlikely to be recommended for this type of family, unless the family is of or Ashkenazi or Eastern European Jewish ancestry**
Strong: Not all women in these families will develop breast or ovarian cancer, but risk is much higher than that of the general population	One (or more) first– or second-degree relative(s) with: • Breast cancer diagnosed at age 45 or younger in women *or*	Sister with breast cancer diagnosed at age 40 Paternal aunt (father's sister) with breast cancer diagnosed at age 45 and paternal grandmother (father's mother)	• Talk with your healthcare provider about cancer genetic counseling • Genetic counseling and testing for hereditary breast and ovarian cancer is often recommended for this type of family.

	• Triple negative breast cancer diagnosed at age 60 or younger in women *or* • Primary cancer of both breasts *or* • Both breast and ovarian cancer in the same relative *or* • Male breast cancer *or* • Ovarian cancer *or* • Two or more first– or second-degree relatives from the same side of the family with breast cancer, if at least one breast cancer was diagnosed before age 50. *or* • Three or more first– or second-degree relatives from the same side of the family with breast, pancreatic, or high grade prostate cancer at any age..	with breast cancer diagnosed at age 55 Mother with ovarian cancer Father with pancreatic cancer at age 55, paternal grandmother with breast cancer at age 60, and brother with high grade prostate cancer at age 60	

Appendix 2:

Indication for use of MRI as adjunct to mammogram for high-risk women

- Having BRCA 1, 2 mutations
- Having a first degree relative with BRCA 1, 2 mutations
- Having a lifetime risk of 20-25% or more
- Received chest radiation between age 10-30 years
- Carry or have a first-degree relative who carries mutation in TP 53 or PTEN genes

Appendix 3:

Criteria for Genetic Risk Evaluation

➢ An affected individual with one or more of the following:

- Early –age- onset breast cancer
- Triple negative (ER -, PR-, HER-) breast cancer
- Two breast cancer primaries in a single individual
- Breast cancer at any age and
  - ≥ one closed blood relative with breast cancer≤ 50 years, or
  - ≥ one close blood relative with epithelial ovarian cancer at any age, or
  - ≥ two close blood relatives with breast cancer and/or pancreatic cancer at any age
  - A combination of breast cancer with one or more of the following: thyroid cancer, sarcoma, adrenocortical carcinoma, endometrial cancer, pancreatic cancer, brain tumors, diffuse gastric cancer, dermatological manifestation and /or macrocephaly, leukemia/ lymphoma on the same side of family (especially if early onset)
- Ovarian cancer
- Male breast cancer

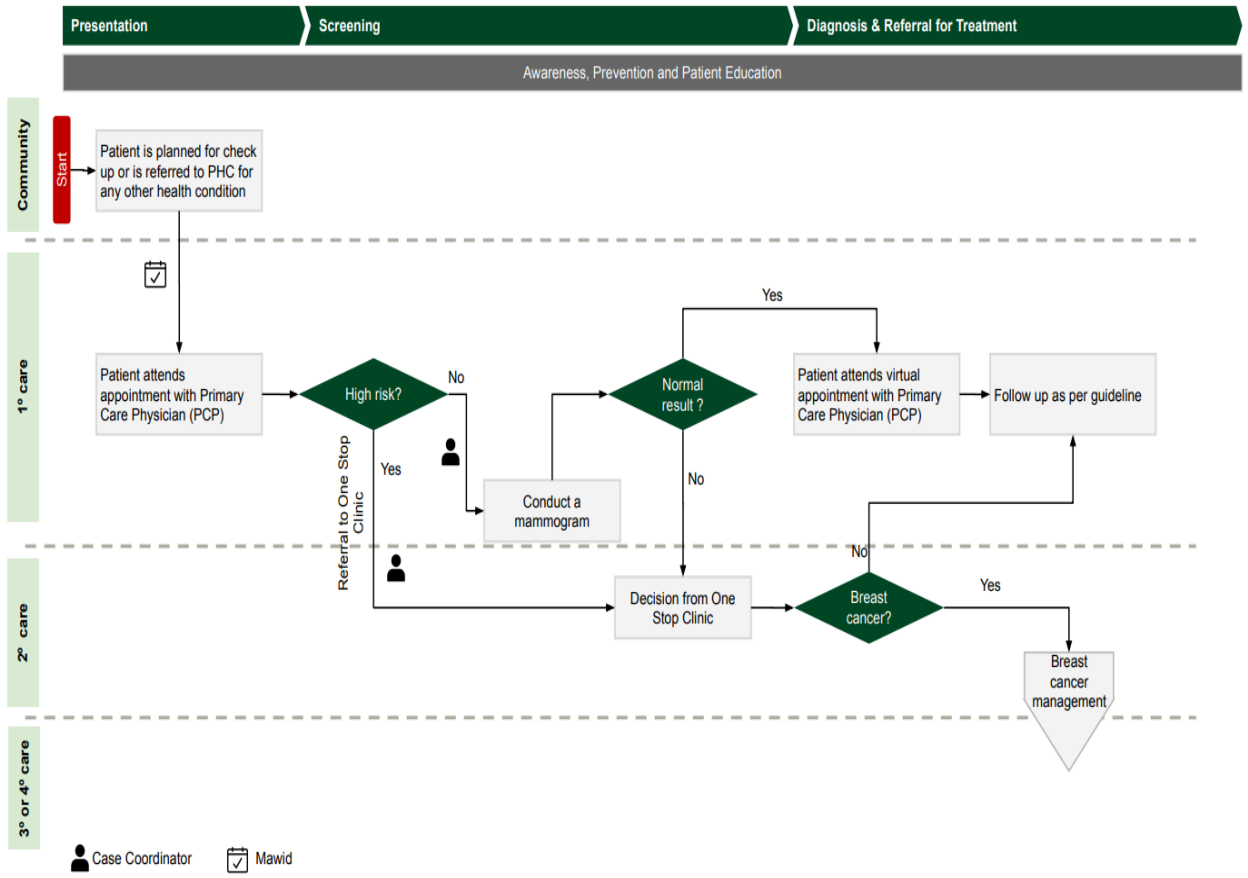
➢ An affected individual with a family history of one or more of the following:

- ≥ Two Breast primary, either in one individual or two different individuals from the same side of the family Maternal or paternal
- ≥ One ovarian cancer primary from side of family maternal or paternal
- First -or second –degree relative with breast cancer ≤45 years
- A combination of breast cancer with one or more of the following: Thyroid cancer, sarcoma, adrenocortical carcinoma, endometrial cancer, pancreatic cancer, brain tumors, diffuse gastric cancer, dermatological manifestation and / or macrocephaly. or leukemia /Lymphoma on the same side of family (especially if early onset)
- A known mutation in breast cancer suitability gene within the family
- Male breast cancer

References:

1. NCCN Clinical Practice Guidelines in Oncology. Breast Cancer Screening and Diagnosis. V.1.2011.
2. The National Comprehensive Cancer Network (NCCN) Clinical Practice Guidelines in Oncology. Genetic/Familial High-Risk Assessment: Breast and Ovary. V.1.2012
3. V.1.2011. 2. NHS. Clinical Guidelines for Breast Cancer Screening Assessment. NHSBSP Publication No 49.2010
4. the National Health System (NHS) Cancer Screening Programs. Technical Guidelines for Magnetic Resonance Imaging for the Surveillance of Women at Higher Risk of Developing Breast Cancer. NHSBSP PUBLICATION NO 68. 2012
5. National Comprehensive Cancer Network. NCCN Guidelines Version 3.2019 Genetics/Familial High-Risk Assessment: Breast and Ovarian.
6. Final Recommendation Statement: Breast Cancer: Screening. External icon U.S. Preventive Services Task Force. August 2019.
7. Ontario Breast Screening Program
8. American cancer society

R3 Breast CA Screening Pathway:



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