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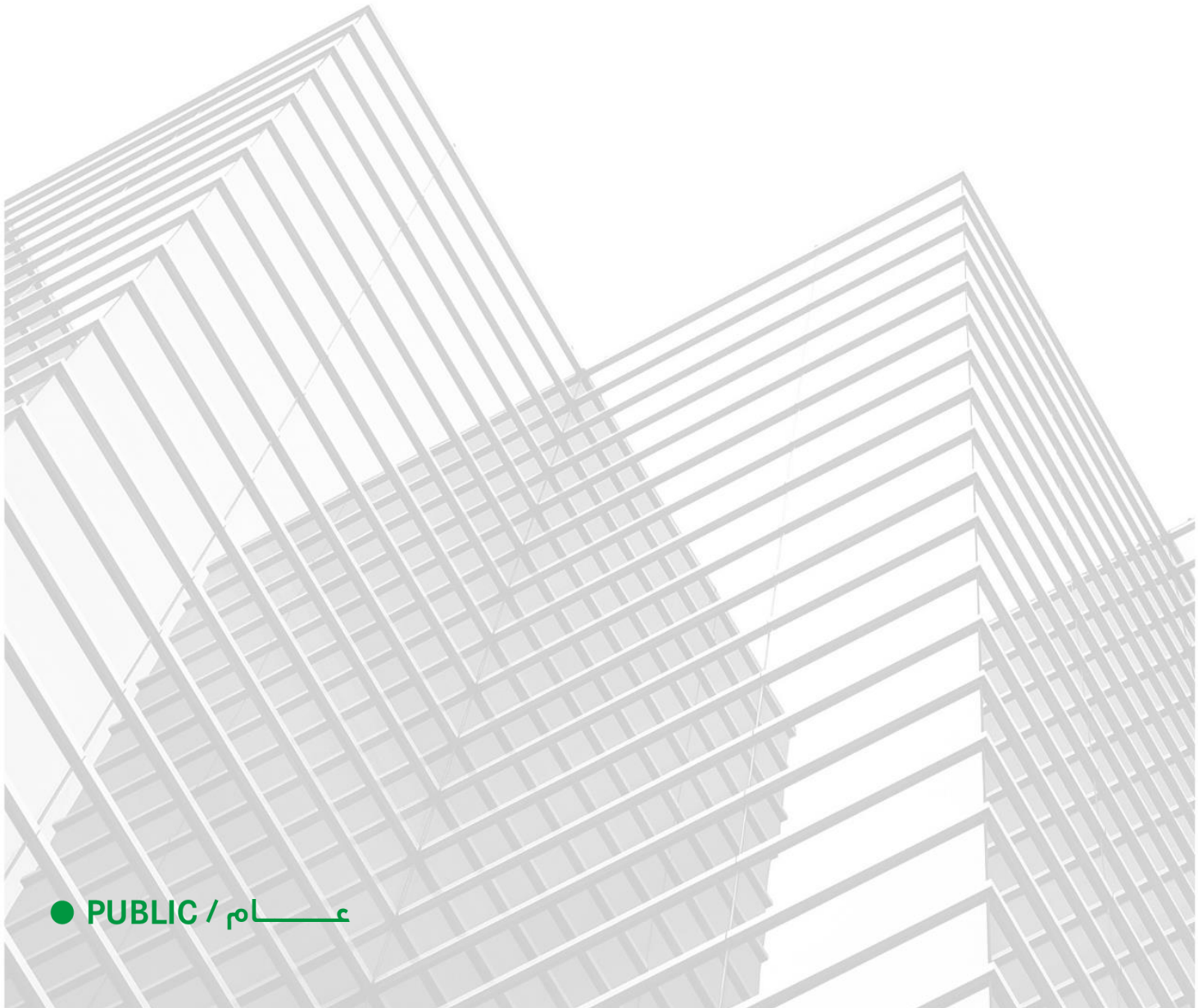
DEPARTMENT OF HEALTH

Standard for Breast Cancer Screening & Diagnosis



PUBLIC / عـــــــام

Document Title:	Standard for Breast Cancer Screening & Diagnosis		
Document Ref. Number:	DoH/ST/BCSD/ADPHC/V2/2025	Version:	V2
New / Revised:	Revised		
Publication Date:	July 2025		
Effective Date:	August 2025		
Document Control:	DoH Strategy Sector		
Applies To:	DoH licensed Healthcare Providers and Professionals		
Owner:	Community Health Sector, Abu Dhabi Public Health Center		
Revision Date:	June 2028		
Revision Period:	Three years from the publication date		
Contact:	cancerprevention@adphc.gov.ae / chs@DoH.gov.ae		

1. Standard Scope

1.1 Purpose

The standard mandates:

1.1.1 The case mix, eligibility criteria and data reporting requirements for the screening and diagnosis of breast cancer;

1.1.2 The clinical care to be provided and care pathways consistent with international evidence-based guidelines and best practice and DoH breast cancer screening and diagnosis pathway; and

1.1.3 The services and service specifications to be delivered for breast cancer screening and diagnosis in the Emirate of Abu Dhabi.

1.2 Scope

1.2.1 This standard applies to all Healthcare Providers (Facilities and Professionals) licensed by DoH in the Emirate of Abu Dhabi delivering health services for breast cancer screening and diagnosis, including mobile units.

1.2.2 For this standard, breast cancer screening and diagnosis include the following services:

1.2.2.2 Breast Cancer Screening services.

1.2.2.3 Breast assessment and diagnosis; and

1.2.2.4 Familial/ Genetic High-risk Assessment.

1.2.3 This standard refers to females determined as eligible for breast cancer screening services, in accordance with the criteria detailed in this Standard.

2. Definitions and Abbreviations

No.	Term / Abbreviation	Definition
2.1	ADH	Atypical Ductal Hyperplasia
2.2	ADPHC	Abu Dhabi Public Health Center
2.3	BIRADS	Breast Imaging Reporting and Data System
2.4	BRCA	Breast Cancer Gene
2.5	CC	Craniocaudal
2.6	DoH	Department of Health
2.7	FDA	United States Food and Drug Administration

2.8	IT	Information Technology
2.9	LCIS	Lobular Carcinoma in Situ
2.10	MDT	Multidisciplinary Team
2.11	MLO	Mediolateral Oblique
2.12	MRI	Magnetic Resonance Imaging
2.13	NCCN	National Comprehensive Cancer Network
2.14	NHS	National Health System
2.15	QC	Quality Control

3. Standard Requirements and Specifications

3.1 Clinical Definitions

3.1.1 Breast Cancer Screening Case mix is the type or groups of patients to be screened and is defined to include all females aged 20 years and above residing in Abu Dhabi, except where exclusion criteria for mammogram apply.

3.1.2 Females are excluded from mammogram screening if they:

3.1.3.2 Have had a bilateral mammogram within the last 12-24 months;

3.1.3.3 Have had a bilateral mastectomy;

3.1.3.4 Are pregnant;

3.1.3.5 Are breastfeeding.

3.1.3 Screening shall not be carried out during pregnancy or lactation. Screening can be resumed around 6 weeks after the cessation of breastfeeding.

3.1.4 **Screening mammograms** are carried out for healthy women, who have no symptoms of breast cancer (following age criteria given in **Appendix 2).**

3.1.5 **Diagnostic mammograms** are performed to evaluate a breast complaint or abnormality detected by clinical breast examination or routine screening mammogram.

3.1.6 Clinical breast examination (CBE) involves inspection and palpation of all breast tissue including lymph nodes basins.

3.1.7 **Breast Awareness:** women shall be encouraged and educated on how to conduct breast self-exam to become aware of the feel and shape of their breasts, so that they are familiar with what is normal for them and able to report any changes immediately to their healthcare provider.

3.1.8 Breast Assessment and Diagnosis involve triple assessment through further imaging, clinical breast exam and needle biopsy. The aim of the assessment is to obtain a definitive and timely diagnosis of all potential abnormalities detected during screening.

3.1.9 **Genetic/Familial High-Risk Assessment**: includes genetic counseling by a trained physician with experience and expertise to deliver this service and referral for genetic testing, for women with strong family history or genetic predisposition.

3.2 Service Specifications

Breast Cancer Screening services shall:

3.2.1 Comply with DoH breast cancer screening and diagnosis care pathways, recommendation of breast cancer screening, clinical quality indicators, and timelines for referral in accordance with Appendices 1, 2 and 3.

3.2.2 Comply with the requirement of breast screening unit, detailed in Appendix 5.

3.2.3 Assign a screening program director/coordinator who will be in charge of overall performance and quality assurance of the unit and will be responsible for submitting data on screening visits and outcomes to DoH.

3.2.4 Approved protocol for referral of women with screen detected abnormalities to diagnostic breast assessment unit.

3.2.5 Establish and maintain record of mammogram outcomes audit program to follow up positive mammography assessments and to correlate pathology results with the interpreting physician's findings.

3.2.6 Establish internal quality audit procedures to demonstrate compliance with this standard and other associated regulatory policies and standards.

3.2.7 Ensure availability of evidence of compliance with DoH Clinical Quality indicators specified at Appendix 3.

3.2.8 Thiqa holders participating in the Comprehensive Health Screening Program "IFHAS" shall have their data submitted using the appropriate codes in **Shafafiya Reporting** https://www.DoH.gov.ae/-/media/5ADAFA38E88748A6B0A9E6E2E241AD49.ashx

3.3 Breast Assessment and Diagnosis Services

Breast assessment and diagnosis services shall be carried out in a Diagnostic Breast Assessment unit. The unit shall:

3.3.1 Comply with breast cancer screening and diagnosis care pathways, clinical quality indicators, and timelines for referral in accordance with Appendices 1 and 4 respectively.

3.3.2 Comply with the requirements of Diagnostic Breast Assessment unit described at Appendix 5.

3.3.3 Have approved written protocols for the screening assessment and diagnosis; that clearly define the methods of assessment and the diagnostic pathways for all possible assessment outcomes.

3.3.4 DoH recognizes guidance on screening assessment and diagnosis including those of the National Comprehensive Cancer Network (NCCN) and, the National Health System (NHS) the National Institute for Health and Clinical Excellence.

3.3.5 Establish internal audit procedures to demonstrate compliance with this standard and other associated regulatory policies and standards.

3.3.6 Ensure availability of evidence of compliance with DoH Clinical Quality indicators specified at Appendix 3.

3.3.7 Report breast screening assessment and diagnosis results to DoH through the appropriate channels.

3.4 Licensed Healthcare Professionals

All licensed health professionals involved in the breast cancer screening, screening assessment and diagnosis shall:

3.4.1 Satisfy the qualifications relevant to their position as defined by the DoH Professional Qualification Requirements.

3.4.2 Comply with the DoH Standard for Clinical Privileging, including limiting their practice to the skills, competencies and the privileges granted within the particular facility with which they are associated.

3.4.3 Have knowledge of the principles of breast cancer screening, assessment, diagnosis and management.

3.4.4 Participate in continuing medical education in accordance with DoH requirements.

3.4.5 Take part in any recognized external quality assessment schemes.

3.4.6 All units involved in screening and diagnostic activities shall ensure the formation of proper multidisciplinary teamwork involving a full range of specially trained professionals including a breast radiologist, mammographer, sonographer, pathologist, breast surgeon, genetic counselor, nurse counselor and breast radiation oncologist/radiotherapist.

3.5 Breast Screening and Diagnosis Communication

3.5.1 The woman is central to the screening process. Any communication with her shall take into account the need to avoid direct or indirect harm and the requirement to balance benefits against risks.

3.5.2 Women shall be provided with (verbal and written) education and information, regarding benefits, risk and limitation of breast cancer screening, and about the screening test, associated procedures and expected timeframes to receive results (consistent with those specified in Appendix 3).

3.5.3 Adequate attention shall be given to the level of literacy, diversity, and linguistic requirements of different populations.

3.6 Breast Cancer Screening

3.6.1 Breast Cancer Screening shall be provided in accordance with the DoH Breast screening and diagnosis care pathway as provided at Appendix 1, including the following activities:

3.6.1.1 Review of family history & risk assessment.

3.6.1.2 Clinical breast exam (Physical exam).

3.6.1.3 Patient Risk Assessment Tool; Gail Model (Gail Model pathway provided at Appendix 4).

3.6.1.3.1 **Gail Model Risk Assessment Tool Questions: (Please refer to the online Calculator at: https://bcrisktool.cancer.gov/calculator.html**

- **Patient Eligibility – excluding factors:**

- Availability of medical history of any breast cancer or of ductal carcinoma in situ (DCIS) or lobular carcinoma in situ (LCIS) or has she received previous radiation therapy to the chest for treatment of Hodgkin lymphoma.

- Having a mutation in either the *BRCA1* or *BRCA2* gene, or a diagnosis of a genetic syndrome that may be associated with elevated risk of breast cancer.

- **Patient demographics:**

- Patient Age
- Patient Ethnicity/Race

- **Patient & Family History:**

- Personal history of a breast biopsy with a benign (not cancer) diagnosis.
- Patient's age at the time of her first menstrual period.
- Patient's age when she gave birth to her first child.
- Number of patient's first-degree relatives (mother, sisters, daughters) have had breast cancer.

3.6.1.4 Breast awareness; and

3.6.1.5 Screening mammogram.

3.6.1.6 Additional activities for high-risk individuals:

3.6.1.6.1 Screening MRI; and

3.6.1.6.2 Referral to a genetic counselor in cases of strong familial/genetic predisposition.

3.6.2 Periodical screening shall be carried out as specified in DoH Breast Cancer Screening recommendations at Appendix 2.

3.6.3 Detailed history shall be evaluated and completed by the screening facility nurse, each time a woman visits for screening. The purpose of that is to identify patients at increased risk and determine the appropriate screening tests or referral to genetic counseling.

3.6.4 Clinical breast exam (physical exam) shall be conducted by a trained physician, who will then refer the woman for a screening mammogram.

3.6.5 Screening mammography shall involve two x-ray images for each breast: craniocaudal (CC) and mediolateral oblique (MLO).

3.6.6 Ultrasound of the breast is recommended as adjunct to screening mammogram for women with dense breast/s, increased risk, or revealed equivocal or positive finding, in accordance with Appendix 2.

3.7 Reporting of Screening Mammogram

3.7.1 Mammogram results shall be documented and communicated with the patient through follow-up within **15 working days** of the screening mammogram date.

3.7.2 Double reading of screening mammograms is mandatory. Mammograms shall be interpreted by two independent breast radiologists; one shall be fellowship trained in breast radiology, breast MRI.

3.7.3 In case of discordant opinions between two radiologists, either consensus or preferably arbitration using a third expert screening radiologist shall be carried out.

3.7.4 The final assessment shall be reported using the FDA-approved Breast Imaging Reporting and Data System (BIRADS®) Final Assessment Categories as described at Appendix 6.

3.7.5 A synoptic breast imaging report shall be used by a breast radiologist containing at least the following:

3.7.5.1 Interpreting physicians' names.

3.7.5.2 Date of examination.

3.7.5.3 Patient identification.

3.7.5.4 Reason for examination.

3.7.5.5 Breast density.

3.7.5.6 Description of significant imaging lesions: mammographic characteristics of the lesion; calcification patterns; location (in quadrants); distance from the nipple (in mm); and size (maximum diameter in mm).

3.7.5.7 Final Assessment (BIRADS).

3.7.5.8 Recommended next steps.

3.8 Screening Outcomes

3.8.1 All outcomes of the screening tests shall be documented and communicated with the patient through follow-up visit. It is the responsibility of the reporting physician at the screening facility to inform and provide the results to the patient regarding her screening results. Report shall be routinely ready for outpatients in five working days. If positive the result shall be reported immediately.

3.8.2 If mammogram is Normal/Benign (BIRADS 1/2), women are discharged to routine screening. Screening frequency will follow recommendations specified in Appendix 2.

3.8.3 If a woman requires further assessment for abnormal screening mammogram or clinical breast exam, referral shall be to a Diagnostic Breast Assessment Unit for further assessment and diagnosis described in Appendix 5.

3.9 Breast Assessment and Diagnosis

3.9.1 Breast cancer screening shall be provided in accordance with the Breast Cancer Screening and Diagnosis Care Pathway (Appendix 1).

3.9.2 Assessment and diagnostic work up of screen detected abnormality is best achieved using the triple assessment:

3.9.2.1 Imaging, usually diagnostic mammography, breast MRI, CEM, ultrasound in cases of high risk and dense breast tissue.

3.9.2.2 clinical examination.

3.9.2.3 image-guided needle biopsy for histological examination, if indicated.

3.9.3 Cytology alone **shall not** be used to obtain a non-operative diagnosis of breast cancer.

3.9.4 Clinical examination is mandatory for every woman with a confirmed mammographic or ultrasound abnormality that needs needle biopsy and for all women recalled because of clinical signs or symptoms.

3.9.5 Clinical examination is not mandatory for women whose further imaging is entirely normal.

3.9.6 Core needle stereotactic biopsy shall be performed under image guidance.

3.9.7 Clip shall be placed at site of biopsy during the procedure of needle sampling to identify lesion location.

3.9.8 Results of assessments shall be evaluated and considered by a multidisciplinary team (MDT). Particular attention shall be given to address radiology-pathology correlation.

3.9.9 Early recall for repeat mammography either in screening or diagnostic settings is not recommended and shall never be used as a substitute for inexpert or inadequate assessment.

3.9.10 Early recall rate shall be recorded, monitored, and audited.

3.9.11 Referral of histologically confirmed cancer cases for treatment shall be completed within 10 working days of the diagnosis.

3.9.12 All screen-detected cancers shall be reported to DoH through the appropriate channels.

3.10 Screening Women at Increased Risk

3.10.1 Details of women who have increased risk of developing cancer are specified in Appendix 2.

3.10.2 Screening tests and frequency shall be in line with specifications detailed in table 2, Appendix 2.

3.10.3 Criteria of use of MRI as adjunct to mammogram for high-risk women are detailed in Appendix 2.

3.10.4 MRI shall be performed in a specialized breast care unit that has a dedicated MRI machine for breast MRI.

3.10.5 MRI examination shall be carried out in day 6-16 of the menstrual cycle and within two weeks of mammography.

3.10.6 MRI examination shall be interpreted by a trained breast radiologist with privilege in breast MRI reporting and MRI guided biopsy.

3.10.7 The radiologists interpreting breast MRIs shall be:

3.10.7.1 Experienced in interpreting mammography, breast ultrasound, and breast MRI to carry out accurate, clinical comparisons.

3.10.7.2 Be able to perform an MRI-guided biopsy.

3.10.7.3 Reporting of MRI shall use the BIRADS Final Assessment Categories as described at Appendix 6.

3.10.7.4 The use of synoptic MRI report is recommended.

3.10.7.5 Equipment shall be maintained and serviced in accordance with the DoH Radiology and Medical Imaging Standard.

3.10.8 Technologists and medical physicists shall comply with all performance, maintenance, and quality control (QC) measures as detailed in the DoH Radiology and Medical Imaging Standard.

3.11 Genetic/Familial High-Risk Assessment

3.11.1 Women who have strong family history or genetic predisposition to breast cancer as detailed in Appendix 2, shall be referred to Genetic Counselor.

3.11.2 Genetic counseling is highly recommended when genetic testing is offered and after disclosing results.

3.11.3 Genetic counseling can be given by a genetic counselor, medical geneticist, oncologist, surgeon, oncologist nurse or other healthcare professional with expertise and experience in genetic counseling who is privileged by the facility to provide counseling.

3.11.4 Comprehensive gene testing includes full sequencing of BRCA1/2 and detection of large genomic rearrangement. A list of genetic tests to be performed is provided in Appendix 7.

3.11.5 Women who have gene mutation shall be managed in accordance with DoH recognized international best practices and guidelines; including the NCCN guidelines for Genetic/Familial High-Risk Assessment: Breast and Ovary, V.2.2025.

3.11.6 Screening tests and frequency shall be in accordance with the recommendations detailed in table 2, Appendix 2.

4. Key Stakeholder Roles and Responsibilities

All licensed health professionals involved in breast cancer screening, screening assessment and diagnosis shall:

4.1 Satisfy the qualifications relevant to their position as defined by the DoH Professional Qualification Requirements.

4.2 Comply with the DoH Standard for Clinical Privileging, including limiting their practice to the skills, competencies and the privileges granted within the particular facility with which they are associated.

4.3 Have knowledge of the principles of breast cancer screening, assessment, diagnosis and management.

4.4 Participate in continuing medical education in accordance with DoH requirements.

4.5 Take part in any recognized external quality assessment schemes.

4.6 All units involved in screening and diagnostic activities shall ensure the formation of proper multidisciplinary teamwork involving a full range of specially trained professionals including a radiologist, radiographer, pathologist, surgeon, nurse counselor and medical oncologist/radiotherapist.

5. Monitoring and Evaluation

All licensed healthcare providers (Facilities and Professionals) engaged in providing breast cancer screening and diagnosis services shall:

5.1 Provide clinical services and patient care in accordance with this standard and in accordance with DoH Policies and Standards and the laws and regulations of the Emirate of Abu Dhabi.

5.2 Comply with DoH Clinical Quality Indicators specified in Appendix 3.

5.2.1 Submit data to DoH in accordance with the DoH Reporting of Health Statistics Policy and as set out in the DoH Data Standards and Procedures.

5.2.2 Collect and submit data to DoH on screening visits outcomes.

5.2.3 Report all histo-pathologically proven breast cancer positive cases to DoH.

5.2.4 managing and maintaining patient medical records, including developing effective recording systems, maintaining confidentiality, privacy, and security of patient information.

5.2.5 Comply with DoH requirements for Patient Education and consent: the licensed provider shall provide appropriate patient education and information regarding the screening test (physical and mammography) and other radiological examinations and procedures such as biopsy and shall ensure that appropriate patient informed consent is obtained and documented on the patient's medical record consistent with the relevant DoH policies and standards.

5.2.6 Comply with DoH requests to inspect and audit records and cooperate with DoH authorized auditors as required by DoH.

5.2.7 Comply with DoH requirements for secure data management in line with Abu Dhabi Healthcare Information and Cyber Security [ADHICS] Standard.

6. Enforcement and Sanctions

6 DoH may impose sanctions in relation to any breach of requirements under this Standard in accordance with the disciplinary regulation of the Healthcare sector.

7. Payment Mechanism

Eligibility for reimbursement under the Health Insurance scheme is as follows:

7.1. For Thiqa holders, reimbursement shall be consistent with the DoH Standard for Thiqa Preventive List of Interventions available at www.DoH.gov.ae.

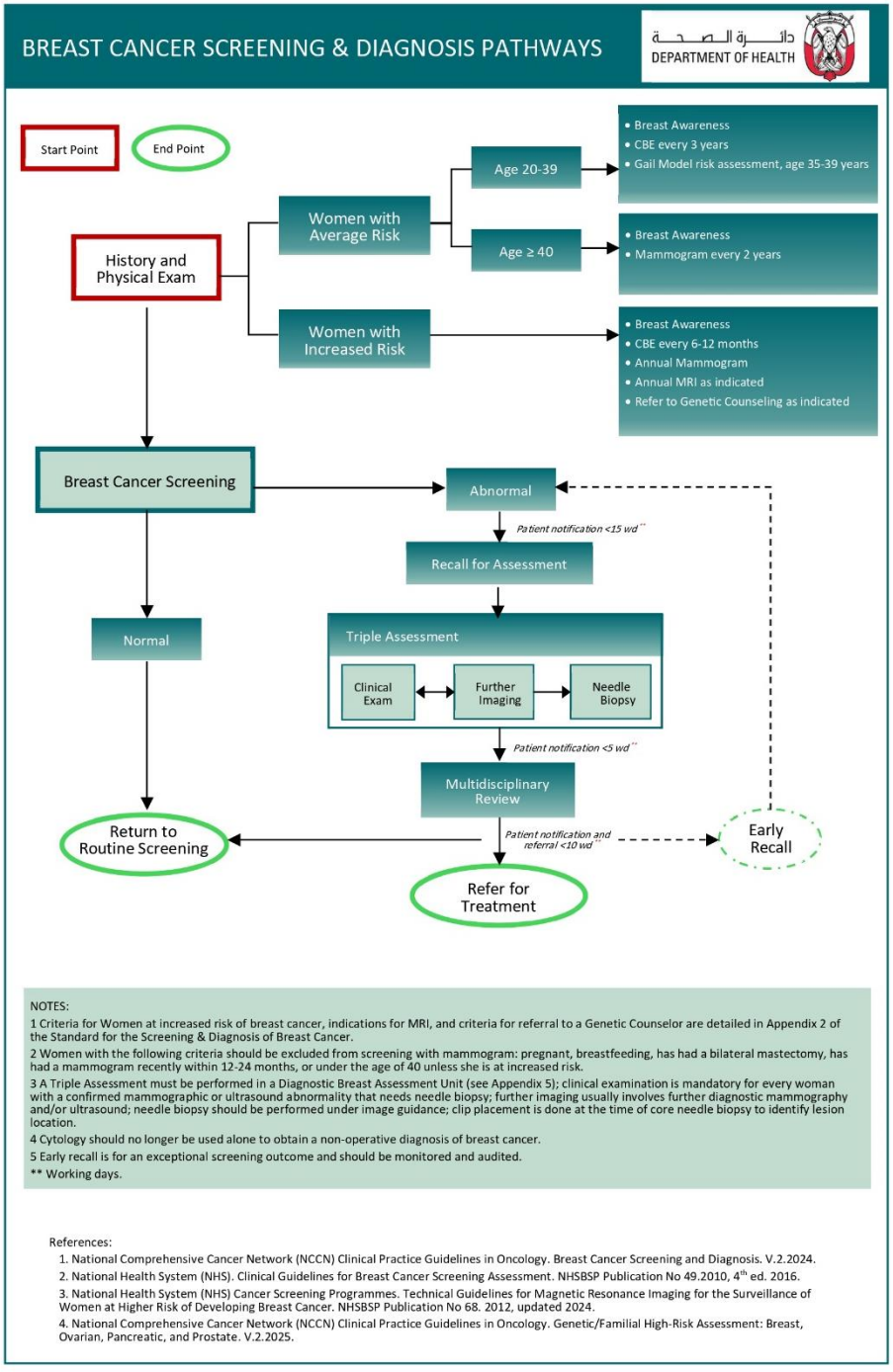
7.2. For non-Thiqa holders, payment shall be consistent with the individual's health insurance product/plan.

8. Relevant Reference Documents

No.	Reference Date	Reference Name	Relation Explanation / Coding / Publication Links
1	2024	NCCN Clinical Practice Guidelines in Oncology. Breast Cancer Screening and Diagnosis	https://www.nccn.org/professionals/physician_gls/pdf/breast.pdf
2	2024	The National Comprehensive Cancer Network (NCCN) Genetic/Familial High-Risk Assessment: Breast, Ovarian, Pancreatic, and Prostate	https://www.nccn.org/professionals/physician_gls/pdf/genetics_bopp.pdf
3	2013	European Guidelines for Quality Assurance in Breast Cancer Screening and Diagnosis	https://op.europa.eu/en/publication-detail/-/publication/4e74ee9b-df80-4c91-a5fb-85efb0fdda2b
4	2024	NHS. Breast Screening Programme Screening Standards	https://www.gov.uk/government/publications/breast-screening-consolidated-programme-standards/nhs-breast-screening-programme-screening-standards-valid-for-data-collected-from-1-april-2017
5	2020	European Commission. Monitoring and evaluation of breast cancer screening programmes: selecting candidate performance indicators	https://cancer-screening-and-care.jrc.ec.europa.eu/en/ecibc/methodologies/screening-indicators
6	2024	CDC. Genetic Testing for Hereditary Breast and Ovarian Cancer	https://www.cdc.gov/breast-ovarian-cancer-hereditary/testing/index.html

7	2013	American College of Radiology. BI-RADS Atlas	https://www.acr.org/Clinical-Resources/Reporting-and-Data-Systems/Bi-Rads
8	2016	NHS Breast Screening Programme. Clinical guidance for breast cancer screening assessment	https://assets.publishing.service.gov.uk/media/5a808356e5274a2e8ab50931/Clinical_guidance_for_breast_cancer_screening_assessment_Nov_2016.pdf
9	2024	NHS Breast Screening Programme. Technical guidelines for MRI for the surveillance of women at higher risk of developing breast cancer	https://www.gov.uk/government/publications/nhs-breast-screening-using-mri-with-higher-risk-women/technical-guidelines-for-mri-for-the-surveillance-of-women-at-higher-risk-of-developing-breast-cancer
10	Jan 2022	Circular USO/29/2022 Abu Dhabi Healthcare Sector Cyberlearning Program	https://www.DoH.gov.ae/en/resources/Circulars
11	May 2024	Abu Dhabi Healthcare Information and Cyber Security [ADHICS] Standard	https://www.DoH.gov.ae/en/resources/standards
12	2024	DoH Radiology and Medical Imaging Standard. DoH/ST/HCFS/RMIS/V1/2024	https://www.DoH.gov.ae/en/resources/standards
13	2025	DoH Guidelines on Somatic Testing in Oncology	https://www.DoH.gov.ae/en/resources/standards
14	2025	DoH Guidelines on Germline Testing in Oncology	https://www.DoH.gov.ae/en/resources/standards

Appendix 1- Breast Cancer Screening and Diagnosis Care Pathway



NOTES:

1 Criteria for Women at increased risk of breast cancer, indications for MRI, and criteria for referral to a Genetic Counselor are detailed in Appendix 2 of the Standard for the Screening & Diagnosis of Breast Cancer.

2 Women with the following criteria should be excluded from screening with mammogram: pregnant, breastfeeding, has had a bilateral mastectomy, has had a mammogram recently within 12-24 months, or under the age of 40 unless she is at increased risk.

3 A Triple Assessment must be performed in a Diagnostic Breast Assessment Unit (see Appendix 5); clinical examination is mandatory for every woman with a confirmed mammographic or ultrasound abnormality that needs needle biopsy; further imaging usually involves further diagnostic mammography and/or ultrasound; needle biopsy should be performed under image guidance; clip placement is done at the time of core needle biopsy to identify lesion location.

4 Cytology should no longer be used alone to obtain a non-operative diagnosis of breast cancer.

5 Early recall is for an exceptional screening outcome and should be monitored and audited.

** Working days.

References:

1. National Comprehensive Cancer Network (NCCN) Clinical Practice Guidelines in Oncology. Breast Cancer Screening and Diagnosis. V.2.2024.
2. National Health System (NHS). Clinical Guidelines for Breast Cancer Screening Assessment. NHSBSP Publication No 49.2010, 4th ed. 2016.
3. National Health System (NHS) Cancer Screening Programmes. Technical Guidelines for Magnetic Resonance Imaging for the Surveillance of Women at Higher Risk of Developing Breast Cancer. NHSBSP Publication No 68. 2012, updated 2024.
4. National Comprehensive Cancer Network (NCCN) Clinical Practice Guidelines in Oncology. Genetic/Familial High-Risk Assessment: Breast, Ovarian, Pancreatic, and Prostate. V.2.2025.

Appendix 2 - DoH Breast Cancer Screening Recommendation

Table 1 - Summary of DoH Screening Recommendations [1]

Screening Category	Age	Screen Assessment tools
Women at average Risk	20 – 39 years	• Breast Awareness • Clinical Breast Exam every three years • Gail Model risk assessment, from age 35 years
	≥ 40 years	• Breast Awareness and consultation • Mammography every two years
Women at increased Risk[a]		• Breast Awareness and consultation • Clinical Breast Exam every 6-12 months • Annual Mammography screening • Annual MRI screening - as indicated • Referral to genetic counselor - for strong familial/genetic predisposition

1. Adapted from: NCCN Clinical Practice Guidelines in Oncology. Breast Cancer Screening and Diagnosis. V.6.2024

Women at Increased Risk [1]	
A woman is considered at higher risk of developing breast cancer if she has one or more of the following criteria:	
1	Previous treatment with chest radiation at a young age (between age of 10-30)
2	Previous history of breast cancer
3	Lobular carcinoma in situ (LCIS) or Atypical ductal hyperplasia (ADH) on previous breast biopsy
4	Strong family history or genetic predisposition
5	Women who have a lifetime risk of 20-25% as defined by models largely dependent of family history
6	Gail Model risk assessment result of 1.67% or more, indicating 5-year risk of developing invasive breast cancer in women aged ≥35

Table 2 - DoH Screening Recommendations for women at Increased Risk [1]

Screening Category	Age	Screen Assessment tools
Previous treatment with chest radiation at a young age (between age of 10-30)	Age < 25 years	• Breast Awareness • Annual Clinical Breast Exam
	Age ≥25	• Breast Awareness • Clinical Breast Exam every 6-12 months • Annual Mammography screening (begin 8-10 years after radiotherapy or age > 25 years, whichever comes last) • Annual MRI screening
Strong family history or genetic predisposition	Age < 25 years	• Breast Awareness • Annual Clinical Breast Exam • Referral to genetic counselor
	Age ≥25 years	• Breast Awareness • Clinical Breast Exam every 6-12 months • Annual Mammography screening • Annual MRI screening • Referral to genetic counselor
Previous history of Breast Cancer		• Clinical Breast Exam every 6-12 months in the first 5 years, annually thereafter. • Annual Mammography screening
5-year 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		
Women who have a lifetime risk of 20-25% as defined by models largely dependent of family history		• Breast Awareness • Clinical Breast Exam every 6-12 months • Annual Mammography screening • Annual MRI screening

Criteria for use of MRI as adjunct to mammogram for high-risk women (at least one) [1]	
1	Having BRCA 1, 2 mutation
2	Having a first degree relative with BRCA 1, 2 mutation
3	Having a lifetime risk of 20-25% or more
4	Received chest radiation for cancer treatment between age 10-30
5	Carrying or having a first degree relative who carries mutation in TP 53 or PTEN genes

Criteria for Genetic Risk Evaluation [2]		
An affected individual with one or more of the following:		
1	Early-age-onset breast cancer	
2	Triple negative (ER -, PR-, HER-) breast cancer	
3	Two breast cancer primaries in a single individual	
4	Breast cancer at any age ***and***	
	a	≥ one closed blood relative with breast cancer≤ 50 years, *or*
	b	≥ one close blood relative with epithelial ovarian cancer at any age, *or*
	c	≥ two close blood relative with breast cancer and/or pancreatic cancer at any age, *or*
	d	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)
5	Carrying or having a first degree relative who carries mutation in TP 53 or PTEN genes	
6	Ovarian cancer	
7	Male breast cancer	
An affected individual with a family history of one or more of the following:		
1	≥ Two breast cancer primary, either in one individual or two different individuals from the same side of the family, maternal or paternal	
2	≥ One ovarian cancer primary from either side of family, maternal or paternal	
3	First -or second –degree relative with breast cancer ≤45 years	
4	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)	
5	A known mutation in breast cancer suitability gene within the family	
6	Male breast cancer	
	N. B. Maternal and paternal sides of the family should be considered independently for a familial pattern of cancer: 1st degree: mother, sister, daughter, brother, father- 2nd degree: grandmother, aunt, niece, nephew.	

1. NCCN Clinical Practice Guidelines in Oncology. Breast Cancer Screening and Diagnosis. V.6.2024.
2. The National Comprehensive Cancer Network (NCCN) Genetic/Familial High-Risk Assessment: Breast, Ovarian, Pancreatic, and Prostate. V.2.2025

Appendix 3 - DoH Breast Cancer Screening Clinical Quality Indicators

Clinical Quality Indicators	Definition	Calculation	Acceptable level		Desirable level
1. Participation rate	Percentage of women who have a screening mammogram (calculated biannually as a proportion of the eligible population	[Number of women screened at least once (per 2-year period) / Target population (1st & 2nd year populations averaged from census/forecast)] *100	>70%		>80%
2. Retention rate	The estimated percentage of women who are re-screened within 30 months of their previous screen.		>90%		100%
3. Technical repeat rate	Proportion of women undergoing a technical repeat screening examination	[Number of women undergoing a technical repeat / Number of women screened]*100	<3%		<2%
4. Abnormal Recall rate	Proportion of women recalled for further assessment	[Number of recalls due to abnormal screens / Number of women screened]*100	At Initial screening	<15%	<10%
			At subsequent testing	<10%	<7%
5. Early recall rate	Proportion of screened women subjected to early recall following diagnostic assessment (Early recall refers to the short term re invitation of a woman for follow-up imaging—typically within 3 to 6 months)	[Number of women subjected for early recall / Number of women screened]*100	<1 %		0%

6. Positive Predictive Value	Proportion of abnormal cases with completed follow-up found to have breast cancer	[Number of screen detected cancers / Number of abnormal screens with complete work-up] *100	At Initial screening	>5%
			At subsequent screening	>6%
7. Invasive cancer detection rate	Number of invasive cancers detected per 1,000 screens.	[Number of invasive cancers detected/ number of screened cases] *1000	Initial screening	>5 per1,000
			Subsequent screening	> 3 per 1,000
Clinical Quality Indicators	**Definition**	**Calculation**	**Acceptable level**	**Desirable level**
8. In Situ Cancer Detection Rate	Number of in ductal carcinoma in situ (DCIS) detected per 1,000 screens.	[Number of DCIS detected/ number of abnormal screened cases] *1000	Initial screening	>0.4 per 1,000
			Subsequent screening	>0.4 per 1,000
9. Invasive Cancer Tumor Size	Proportion of invasive screen-detected cancers that are <10 mm in size	[Number of invasive tumors ≤10mm / Total number of invasive tumors] *100	Initial 20%	≥25%
			Subsequent screening ≥25%	≥30%
10. Interval cancer detection rate	Number of women with a diagnosis of invasive breast cancer after a normal screening within 12 AND 24 months of the screen date.	[Number of cancers detected in the 0-12 month interval after a normal screening episode / Total person-years at risk (0-12 months post screen)]*10,000	Within the first year (0–11 months)	< 6 per 10,000
			Within the second year (12–23 months)	12 per 10,000
11. Time Interval	-Screening mammography and result within 15 working days		95%	> 95%
	-Screening and offered assessment within 5 working days		90%	> 90%
	-Assessment and issuing of results within 5 working days		90%	> 90%
	-Non-operative (needle) biopsy and result 5 working days		>90%	100%

References:

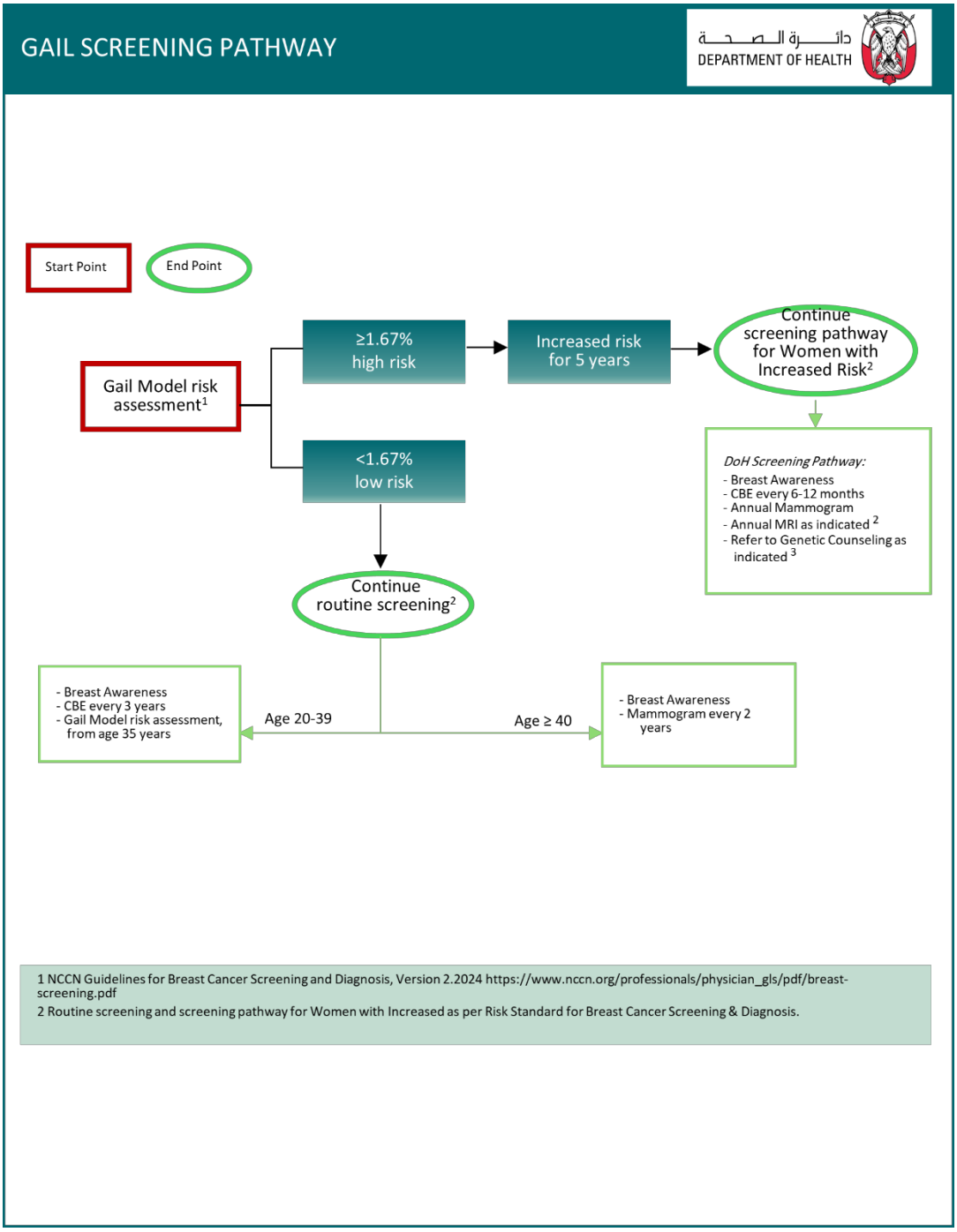
European guidelines for quality assurance in breast cancer screening and diagnosis. Fourth Edit. 2006, supplemented 2013.

NHS Breast screening programme screening standards valid for data collected from 1 April 2017, updated 2024.

European Commission. *Monitoring and evaluation of breast cancer screening programmes: selecting candidate performance indicators*. 2020.

Public Health England (2021) NHS Breast Screening Programme: Consolidated Guidance on Standards for the NHS Breast Screening Programme.

Appendix 4 - Gail Model Screening Pathway



Appendix 5 - Requirement for Breast Screening and Diagnosis Services

A. Requirement for Breast Screening Unit				
	General			
	1	Assign a screening program director/coordinator to be in charge of overall performance, quality assurance of the unit and will be responsible for submitting data on screening visits and outcomes to DoH.		
	2	Perform at least 1,000 mammograms a year;		
	3	Be able to perform risk assessment, physical examinations and screening mammogram;		
	4	Monitor data and feedback of results. Keep a formal record of mammogram results, assessment processes and outcomes;		
	5	Establish and maintain records of mammogram outcomes;		
	6	Develop and implement an audit program to follow up positive mammography assessments and to compare pathological results with the interpreting physician's findings. Develop an action plan to manage any adverse findings.		
	Invitation System			
	1	Develop and implement a personalized invitation system and/or a promotional campaign as well as a planned and structured system to re-invite all previously screened women.		
	Mammography Equipment			
	1	Equipment specifications shall meet DoH recognized standards including the DoH Radiology and Medical Imaging Standard and the Mammogram Quality Standards Act (MQSA) published by the FDA;		
	2	Equipment shall be subject to periodic Quality Control (QC) tests, as specified by the MQSA for screen-film systems and by the manufacturer for full-field Digital Mammography (FFDM) system including:		
		a	Radiographic QC tests, by mammographers, radiographers or technologists trained in Mammography; and	
		b	Medical Physics compliance QC tests at installation and at least annually thereafter, by a DoH licensed qualified Medical Physicist.	
	3	Equipment shall be maintained and serviced in accordance with the manufacturers' guidelines and service specifications, records shall be maintained by providers.		
	Breast Radiographers			
	1	Breast radiographers, mammographers, sonographers or technologists performing the mammographic examination shall:		
		a	Meet all requirements detailed in the DoH Radiology and Medical Imaging Standard and Scope of Practice for Radiologists and for Allied Health;	
		b	Have had at least 40 hours of training specific to the radiographic aspects of mammography; and	
		c	Regularly participate in External Quality Assessment Schemes and radiographic update courses.	

	Breast Radiologists		
	1	Breast radiologists shall:	
		a	Meet all requirements detailed in the DoH Radiology and Medical Imaging Standard and Scope of Practice for Radiologists and for Allied Health;
		b	Have at least 60 hours of training specific to mammography;
		c	Read mammograms from a minimum of 400 screening mammograms annually; and
		d	Have centralized reading or, in the case of a decentralized programmer, centralized double reading.
		e	Take full responsibility for the image quality of the mammograms reported;
		f	Ensure that where necessary images are repeated until they are of satisfactory standard and document all repeated examinations.
	Referrals: Assessment and Feedback		
	1	Keep a formal record of mammogram results, assessment processes, referrals and outcomes.	
	2	Maintain records of mammogram results, referrals, assessment processes and outcomes.	
	3	Have an approved protocol for referral of women with screen detected abnormalities to diagnostic breast assessment unit	
B. Requirement for a Diagnostic Breast Assessment Unit			
	General		
	1	The unit shall:	
		a	Perform at least 2,000 mammograms a year;
		b	Be able to perform physical examinations and ultrasound examinations as well as the full range of radiographic procedures;
		c	Provide cytological examination and/or core biopsy;
		d	Provide sampling under radiological (including stereotactic) or sonographic guidance;
		e	Monitor data and feedback of results; and
		f	Keep a formal record of mammogram results, assessment processes and outcomes.
		g	Have a nominated lead in the radiographic aspects of quality control.
		h	Have a multidisciplinary team who participate in regular review meetings with all team members responsible for diagnostic and treatment services.
	Physico-technical		
	1	The unit shall:	
		a	Have dedicated equipment specifically designed for application in diagnostic mammography e.g. mammography system with magnification ability and dedicated processing;
		b	Be able to provide adequate viewing conditions for mammograms;
		c	Have dedicated ultrasound and stereotactic system and needle biopsy device for preoperative tissue diagnosis; and

		d	Provide sampling under radiological (including stereotactic) or sonographic guidance;	
		e	Comply with specifications of DoH recognized standards such as the MQSA final rule published by the FDA.	
	Staff performing mammographic examination			
	1	The breast radiographers, technologists or other members of staff performing the mammogram shall:		
		a	Have had at least 40 hours of training specific to the radiographic aspects of mammography;	
		b	Regularly participate in External Quality Assessment Schemes and radiographic update courses;	
		c	Be able to perform good quality mammograms.	
	Radiologists			
	1	The unit shall:		
		a	Employ a trained radiologist, i.e. a person who has:	
			i	At least 60 hours of training specific to mammography; and
			ii	Who reads at least 1,000 mammograms per year.
	Pathology Support			
	1	The unit shall:		
		a	Have organized and specialist cyto/histopathological support services who can demonstrate compliance with DoH Clinical Laboratory standards.	

Appendix 6 - BI-RADS® Final Assessment Categories

CPT II EVALUATION CODE	BIRADS SCORE	DESCRIPTION	DEFINITION
3340F	0	Need Additional Imaging Evaluation	The mammogram or ultrasound didn't give enough information to make a clear diagnosis; follow-up imaging is necessary and/or prior Mammogram for comparison
3341F	1	Negative	Negative, there is a 5/10,000 chance of cancer being present. Continue annual screening mammography (for women 40 and older).
3342F	2	Benign Finding	Benign (non-cancerous) finding, same statistics and plan of follow-up as level 1. This category is for cases that have a finding that is characteristically benign such as cyst or fibroadenoma (see below for more detail).
3343F	3	Probably Benign Finding Short Interval Follow-Up Suggested	Probable benign finding, there is less than 2% chance of cancer. Usually receives a 6-month follow-up mammogram; most level 3 abnormalities do not receive biopsy.
3344F	4	Suspicious Abnormality. Biopsy Should Be Considered	Suspicious abnormality. Most category 4 abnormalities are benign but may require biopsy since this category can be malignant in 25-50% of cases.
3345F	5	Highly Suggestive of Malignancy. Appropriate Action Should Be Taken	Highly suggestive of malignancy. Classic signs of cancer are seen on the mammogram. All category 5 abnormalities typically receive biopsy and if the biopsy results are benign, the abnormality usually receives re-biopsy since the first biopsy may not have sampled the correct area. Depending on how individual radiologists differentiate between category 4 and 5, the percentage of category 5 abnormalities that will be cancer may vary between 75% and 99%.
3350F	6	Known Biopsy Proven Malignancy	Lesions known to be malignant are being imaged prior to definitive treatment; assure that treatment is completed

Reference:

1. American College of Radiology. BI-RADS Atlas, 5th ed. 2013.

Appendix 7 - Genetic Tests

Available genetic tests for the patient or affected family member(s) that may be recommended by the Cancer Genetics professional based on the assessment:

Disease	Gene	Method
BRCA1 & BRCA2 Hereditary Breast and Ovarian Cancer	BRCA1	Sequencing
BRCA1 & BRCA2 Hereditary Breast and Ovarian Cancer	BRCA1	Deletion/duplication analysis
BRCA1 & BRCA2 Hereditary Breast and Ovarian Cancer	BRCA2	Sequencing
BRCA1 & BRCA2 Hereditary Breast and Ovarian Cancer	BRCA2	Deletion/duplication analysis
Li-Fraumeni Syndrome	TP53	Sequencing
Li-Fraumeni Syndrome	TP53	Deletion/duplication analysis
Cowden Syndrome	PTEN	Sequencing
Cowden Syndrome	PTEN	Deletion/duplication analysis
CHEK2-Related Susceptibility to Breast Cancer	CHEK2	Sequencing
CHEK2-Related Susceptibility to Breast Cancer	CHEK2	Deletion/duplication analysis
RAD51C-Related Familial Susceptibility to Breast-Ovarian Cancer	RAD51C	Sequencing
RAD51C-Related Familial Susceptibility to Breast-Ovarian Cancer	RAD51C	Deletion/duplication analysis
RAD51D-Increased Risk for Ovarian Cancer, possible Increased Risk for Breast Cancer	RAD51D	
BARD1-Related Susceptibility to Breast Cancer	BARD1	Sequencing
BARD1-Related Susceptibility to Breast Cancer	BARD1	Deletion/duplication analysis
PALB2-Breast Cancer Susceptibility	PALB2	
CDH1-Mutation Correlated with Breast and Ovarian Cancers	CDH1	
STK11-Mutation Predicts Occurrence and/or Recurrence of Breast Cancer	STK11	
ATM-Increased Risk of Breast Cancer	ATM	
NF1-Breast Cancer Driver	NF1	

HER2-Promotes Growth of Cancer Cells	HER-2 (ERBB2)	
K1-67-Prognostic Biomarker in Breast Cancer	K1-67	
RT-PCR/cfDNA for recurrent/advanced metastatic breast cancer	PIK3CA/HER 2	
AKT1-Somatic Mutation Observed in Breast Cancer	AKT1	
ESR1-Unique Transcriptional Profile Favoring Tumor Progression	ESR1	
MSI-H-Determines Genetic Instability in Various Forms of Cancer	MSI-H/dMMR or TMB-H	
PD-L1-Determines Potential Benefit of Immunotherapy Treatment for Cancer	PD-L1	
NTRK-Fusions Lead to Abnormal Proteins Possibly Causing Cancer Growth	NTRK	
Amplified ERBB2 Can Result in Breast Cancer Cell Growth	ERBB2	

Note: BRCA1 and BRCA2 Sequencing are the most ordered genetic tests for high-risk patients.[1]

1. CDC. Genetic Testing for Hereditary Breast and Ovarian Cancer. 2024
2. UAE DoH. Guidelines on Germline Testing in Oncology. 2025
3. UAE DoH. Guidelines on Somatic Testing in Oncology. 2025